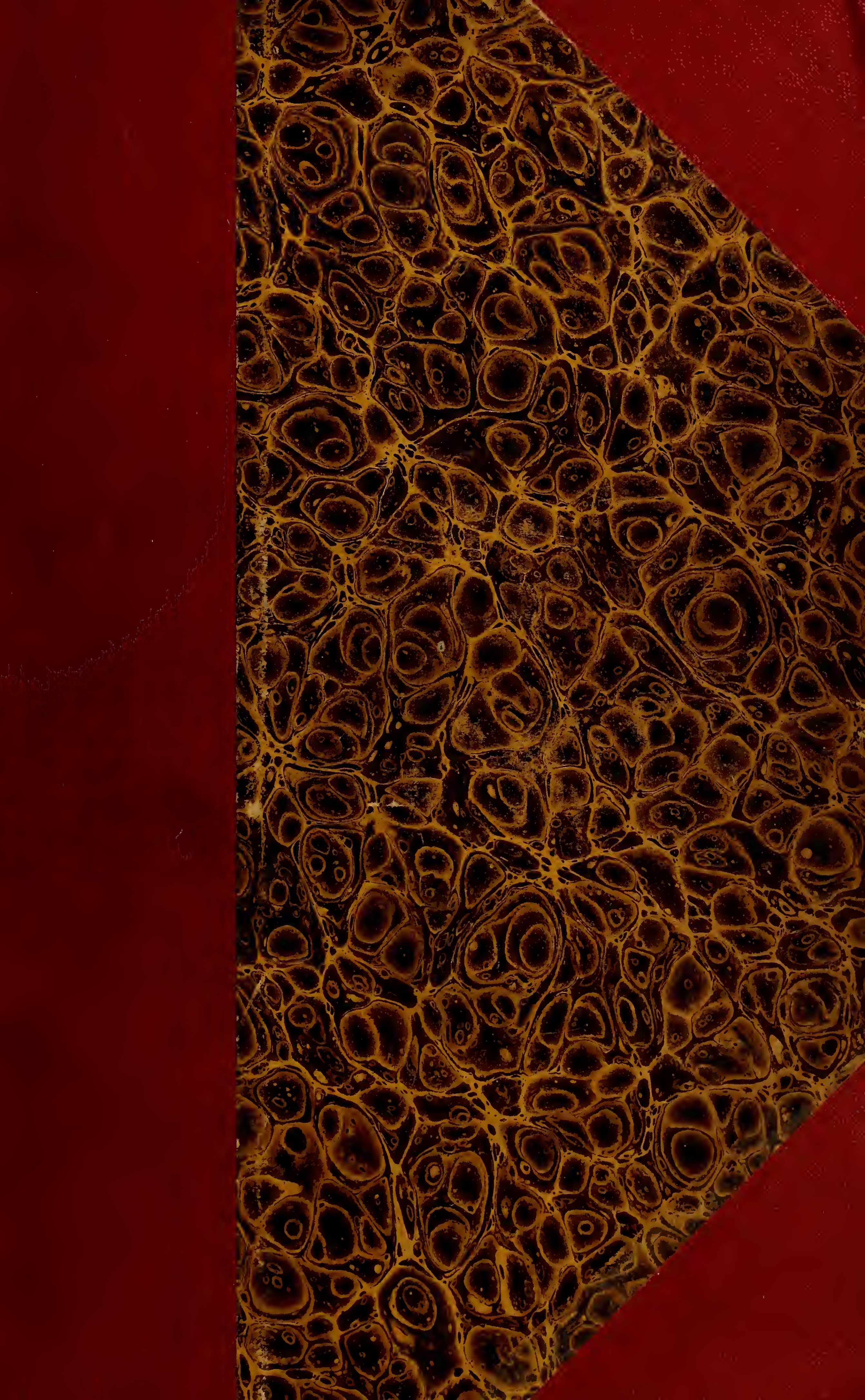

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The New England Medical Gazette

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ITS ALLIED SCIENCES AND INSTITUTIONS

Editors:

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JANUARY, 1912

Page

ORIGINAL COMMUNICATIONS

Some Facts Concerning Syphilis of the Central Nervous System. By E. M. Jordan, M.D., Boston 1
Vaccines in General Practice. By Frederick P. Batchelder, M.D., Boston 5
The Application of Bacterial Vaccines to Surgical Work. By George R. Southwick, M.D., L.R., C.P. Lond., M.R.C.S. Eng. 9
Vaccines at the Massachusetts Homœopathic Hospital. By W. H. Watters, A.M., M.D., Boston 13
The Attitude of the Average Physician Towards Vaccine Therapy, and Its Real Value in Medicine. By H. W. Nowell, M.D., Assistant Pathologist at the Massachusetts Homœopathic Hospital 17
(Discussion of same, p. 22)
Vaccine Work at the Massachusetts General Hospital. By Albert E. Steele, M.D., Boston 26

CLINICAL DEPARTMENT

Conducted by A. H. Ring, M.D. ... 28
Case XI. Diagnosis: Leukemia .. 28
Case 1-c. For Diagnosis 28

EDITORIALS

Addition to Editorial Staff 31
The Noiseless City 31
The Lives of Great Men 34
Medical Retrogression 35
Massachusetts Surgical and Gynæcological Society 36
Meeting of the Trustees of the American Institute of Homœopathy 36
OBITUARY 37
BOOK REVIEWS 38
The Year's Books 41
Chicago Letter 46
Comment on the *Gazette's* "Facts Concerning Vaccination" 47
Open Letter from Dr. Palmer 48
PERSONAL AND GENERAL ITEMS 50
General Miscellany 52-56

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THE NEW ENGLAND
MEDICAL GAZETTE

VOL. XLVII JANUARY, 1912 No. 1

ORIGINAL COMMUNICATIONS.

SOME FACTS CONCERNING SYPHILIS OF THE CENTRAL NERVOUS SYSTEM *

By E. M. Jordan, M. D., Boston, Mass.

In the study of cerebro-spinal syphilis we early learn a division of the subject into those processes which are due to the active specific virus, and those parasyphilitic degenerations which are not marked by truly syphilitic characteristics.

Either of these conditions may attack the subject of the acquired disease or the offspring of a syphilitic parent. Both processes may be present in the same individual.

According to some authorities, from one and one-half per cent. to two and one-half per cent. of all syphilitics develop cerebro-spinal symptoms at some time, while of patients showing tertiary syphilis, from twelve to twenty per cent. are said to develop cerebro-spinal involvement.

The nervous symptoms may come as early as the sixth month or as late as the fortieth year following the initial lesion, and they seem more prone to attack those persons in whom the secondary conditions are light. This is probably due to the fact that such patients take the disease syphilis less seriously and are less thoroughly treated. Be this idea true or false, a large number of persons showing syphilitic involvement of the central nervous system, deny knowledge of the initial sore and admit no recollection of secondary symptoms.

It is unnecessary to state that the actual cause of syphilis is believed to be the spirocheta pallida which is found in the primary, the secondary and sparingly in the tertiary processes.

The anatomical basis of syphilis is an infectious granulomatous tissue which is but partially vascularized, and which shows some tendency to develop into cicatricial tissue, but far more tendency to undergo degeneration.

Infiltration of brain and spinal cord, their meninges, their nerve roots and their blood vessels with this granulation tissue seems to be responsible for the symptoms of cerebro-spinal syphilis. This granulomatous material appears in the meninges as a gelatinous, translucent exudate and as gummatous masses, varying in size from that of the miliary tubercle to that of the acorn.

The diffuse exudate may be scanty or profuse, while the gummatous masses may be few or many.

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* Read at the April meeting of Massachusetts Homœopathic Medical Society, 1911.

The syphilitic process is very apt to attack the base of the brain, especially the interpeduncular area. Often it extends along the fissure of Sylvius to the external surface of the hemispheres. From the soft meninges, extension to the brain and cord is easy and the process thus may become a syphilitic meningoencephalitis or a meningomyelitis.

Arterial degeneration of syphilitic origin gives the vessel a grayish opacity to the eye and renders it firm and stiff to touch. On cross section the arterial wall is found much thickened, diffusely, or in distinct foci. Narrowing of the arterial lumen results, and entire obstruction easily occurs, particularly if thrombosis takes place. If we add to this lastly survey of the pathological basis for the symptoms of syphilis of the nervous system, the statement that any one or more of the nerve roots may be entangled and more or less severely injured by the disease under discussion, we shall see that we have to deal with no certain and unvarying picture, but with one which may present unending variety.

To recognize the early symptoms of syphilitics disease of the nervous system is highly important, since efficient treatment at this time may result in entire disappearance of symptoms. After this early stage is fully past, our best efforts are apt to leave the patient more or less crippled.

The so-called premonitory symptoms include many of the ordinary general cerebral symptoms. The patient's wits may become dull. His apathy and forgetfulness may be decided. He often sleeps unnaturally, during the day, over his meals or at his desk. He is particularly prone to headache of much severity at night. These symptoms are likely to be followed soon or late, if untreated, by more definite signs, such as ptosis, strabismus, aphasia, spasm or paralysis.

Syphilitic arterial disease is frequently especially well marked at the base of the brain and in the middle cerebral artery. This vessel supplies by cortical branches the motor area, the speech area in its motor and sensory phases and by perforating branches it supplies the internal capsule and the basal ganglia.

Obstruction of the circulation through this vessel by syphilitic endarteritis or by the thrombosis which frequently ensues, leads inevitably to cerebral softening with its aphasia, monoplagia, hemiplegia, etc. Frequently preceding the final obliteration of vessels incident to syphilis, the patient has warning in the form of fleeting palsy, transient aphasia, with or without spasm.

In studying the symptoms of syphilitic meningitis and tumor we need to remember those of meningitis and tumor of other than syphilitic etiology. Since the base of the brain is a favorite place of attack, signs of involvement of the cranial nerves appear many times.

To interpret the symptoms properly we need definite knowledge of the anatomy and physiology of the twelve pairs of nerves. Ocular signs are important and include, of course, contraction

of visual fields, hemianopsia, inequality, irregularity and rigidity of the pupils, along with changes in the fundi and defects in the movement of eyeballs and lids. Irritation of the fifth cranial results in pain in its distribution, with perhaps spasm in the muscles of mastication. Destructive disease of the same nerve causes anæsthesia of the corresponding area and paralysis of the muscles concerned in chewing.

Facial paralysis with loss of function of the adjacent auditory nerve occasionally results from syphilis, while the lower cranial nerves are said to be less frequently involved in this disease. In the less frequent syphilitic assault on the meninges over the convexity of the cerebrum we again may find any or all of the general cerebral symptoms, but soon or late cortical irritation appears, evidenced by local or general convulsions. Severe crippling processes here entail loss of function of the areas concerned, which may be those of motion, sensation, vision, hearing or speech.

In studying spinal syphilis we find the disease attacking meninges, nerve roots and blood vessels primarily, and that actual disease of the cord itself comes by way of a preceding meningitis or endarteritis of specific origin. The symptoms induced are very little different from those of other pathological processes in the same situation.

Meningomyelitis of syphilis causes the backache, the root pains, the sensory, motor, sphincteric and trophic disturbances which are the familiar signs of spinal disease in general. Unilateral interruption cord gives the Brown-Sequard complex of palsy below the lesion on the same side with anæsthesia below the lesion on the opposite side as surely when due to syphilis as when owning any other cause.

Thrombosis of vessels incident to syphilis is undoubtedly the basis of some of our cases called myelitis. In individuals who have had syphilis we sometimes see the scraping toes, the weak, more or less rigid, adducted knees with active reflexes incident to Erlir type of syphilitic spastic paralysis. Any of the ill effects wrought upon the nervous system by acquired syphilis may and do appear at times in those who inherit that taint. The evidence may be congenital, or it may appear in childhood, at puberty, or even later. The history of a syphilitic parent with such signs as Hutchinson's teeth, interstitial keratitis, depression of the bridge of the nose, rhagades about the mouth, etc., aid the recognition of the causative factor. That the parasyphlides, tabes and dementia paralytica may appear early in life from a specific inheritance should not be forgotten.

In making the diagnosis of syphilis of the central nervous system, a plain admission of a specific history on the part of the patient helps us out at once. The value of negative history is impaired from the frequency with which syphilis attacks the nervous apparatus of those whose early symptoms were mild and even unnoted. In searching our patient for confirmatory

signs of syphilis, we shall need all the common knowledge of that disease of the eye, nose, mouth, throat, glands, skin, and periosteum.

Among special nervous symptoms we find that headache with marked nocturnal exacerbation is highly suggestive. Epileptiform convulsions occurring for the first time after the age of thirty years, when not due to uremia, are often due to syphilis. Apoplectic attacks in those of less than fifty years, in the absence of endocarditis, renal disease and injury, are suspicious. Another useful point is multiplicity of lesions, such as disease of the brain and cord, disease of base and convexity or disease of both hemispheres. Syphilis of the nervous system is very prone to make its onset by repeated advances and remissions, by fleeting palsy, transitory numbness and tingling, or momentary disturbance of vision, speech or memory. The Wasserman reaction seems destined, in suitable hands, to aid us.

In considering prognosis and treatment we must take into account first tabes and dementia paralytica. These diseases occur perhaps only in the syphilitic, but they are degenerative processes, and are not themselves truly syphilitic. While no treatment makes any great impress upon these degenerations, it is well to remember that treatment directed to the tabetic individual as a whole, rather than toward his degenerating nerve columns in particular, may well reward our efforts.

It is well particularly to remember that syphilis sometimes coexists with the parasyphilides, and that occasionally the tabetic individual may thus benefit from mercury and iodine. We must also carefully separate the syphilitic process itself from its destructive sequelæ. The former usually yields to efficient treatment, while the latter abide, since degeneration, disintegration, softening and sclerosis are permanent and irremediable. Efficient treatment must then be early, since cure in the strict sense may be effected only prior to destruction of tissue.

In illustration of some phases of the question, two cases may briefly be cited:—A man of forty years, single, admitting gonorrhœa but denying syphilis, was treated for some time for an odorous discharge from the nose. While under treatment he had much headache, especially troublesome at night. A neurological examination revealed internal strabismus of the left eye with severe keratitis, anæsthesia of the left side of face, paralysis of the muscles of facial expression and of mastication upon the left side with loss of hearing of the left ear. The man had disease at the base of the brain on the left side at the level of the pons, involving the fifth, sixth, seventh and eighth cranial nerves. Syphilis was supposed probable, and under treatment directed to that disease. Advance of the process ceased, and in some six months regeneration of nerves occurred, and the man disappeared, practically well, except for a damaged eye.

Case II.—A young woman of good personal history, having been married something over a year to a man of whom the phy-

sicians in the case knew nothing, suddenly one evening developed an attack of convulsions limited to one hand and arm. Before morning she had shown a total of fourteen convulsive attacks, some of which, Jacksonian in type, she watched with interest, while others, spreading to the whole voluntary musculature, were attended with unconsciousness. These convulsions having resisted bromides, used somewhat freely for days, yielded promptly to the use of potassium iodide.

These two cases made good recoveries because no irreparable damage had been done when sufficient treatment was begun.

In general, persons having shown syphilitic involvement of the central nervous system are never secure from further attacks. They are best protected by strict observance of the "simple life," and treatment directed against their disease repeated at intervals not too long. I believe that we can do much to prevent syphilis of the nervous system by thorough prolonged use of mercury and iodine in our syphilitic cases. The average patient ill with syphilis today is very probably in danger of insufficent use of these remedies rather than of over-dosage. In the presence of cerebro-spinal syphilis so much is at stake that my sympathies are wholly with the physician who aims practically at saturation of his patient to the limit of tolerance at the earliest possible moment with both mercury and iodine.

Such, then, are some of the main features of this disease, and such today is its treatment as I see it.

VACCINES IN GENERAL PRACTICE.*

By Frederick P. Batchelder, M. D., Boston.

When we recall the fact that Sir Joseph Lister's treatise "On the Effects of the Antiseptic Treatment upon the Salubrity of a Surgical Hospital" was first published in 1870; that in 1876 Robert Koch first demonstrated the bacillus of anthrax, and in 1882 the tubercle bacillus, the strides which have been made along the lines of bacteriology, and the more intelligent diagnosis and treatment of some diseases, seem to almost partake of the miraculous.

About thirty years ago the use of the carbolic steam atomizer in the surgical operating room was disappearing, and the medical students of the next decade heard much of aseptic and antiseptic surgical methods, and the pathogenic bacteria were receiving prominent attention. During the next decade there was a swinging of the attention of the medical world from the germ to the suitable soil in the human body in which he could best thrive, and in the past decade the world has witnessed the efforts of the profession in so modifying and elevating conditions in those afflicted with certain diseases that the "soil conditions" in the human body would be more and more unsuitable for the growth and development of the particular germs under consideration. Strange to

* Read before the Massachusetts Surgical and Gynæological Society, December 13, 1911.

note, near the close of three decades from the demonstration of the bacillus of tuberculosis by Koch, we find a growing tendency to fight the battle on new lines. Instead of immediate execution of the culprit germ, he is held captive, encouraged to thrive, multiply, and so to speak, work, until the time appointed for his demise, when the fruits of his toil and life are made the means of the more wide-spread destruction of his fellow germs through raising certain of the defensive powers of the human body to such a higher standard that they can truly say as did a warrior of the past, "We have met the enemy and they are ours."

The general public has developed a great respect for "serum treatment," as they term it, and also an unwholesome fear of its supposed ill effects. It should be understood distinctly that there is a marked difference both in the physical and chemical properties of serum and vaccine, and that the dose of the latter is often but a small fraction of that of the former. It is the duty and privilege of the general practitioner, by his skillful technic in the administration of these newer methods of treatment, and by proper reassurance, to disarm his patients of their fears one by one. As one simple suggestion regarding the technic of the administration of vaccines, I would say that partly by accident and partly through a review of certain anatomical facts as to the cutaneous distribution of nerve endings in the upper arm, the inaction of the hypodermic needle beneath the skin on the outer side of the upper arm has usually been devoid of pain. Oftentimes the patient would not be aware that the needle had been inserted had he not visibly observed the fact. The utility and wisdom of this particular step in the technic of administration may well be illustrated by the experience with a little girl less than two years of age. The vaccine was administered at the point mentioned in the arm, and to our surprise the little one manifested no realization of any of her fears. In fact, quite the reverse was true, for she seemed to think it such a nice thing that she immediately put up her other arm and wanted some in that one, as well.

At this point we would emphasize the fact that the respective places of the general practitioner and the laboratory specialist are as co-workers. In the illustrative cases about to be cited, and in many others, the treatment has been undertaken only after more or less extended conference with our colleague, Dr. William H. Watters, Professor of Pathology in Boston University School of Medicine, and if the general practitioner will but adopt this cooperation as a fundamental rule of first importance, practically all difficulties will disappear.

Another thing which may be the means of saving many hours of valuable time, pertains to the taking of the diagnostic culture by the physician. Where the latter resides at any great distance from the laboratory it is quite essential that swabs which have been passed upon the suspected areas should not only be passed thoroughly over the surfaces of the culture medium in the special tube, but also that they should be left in that particular tube and

the cork and cotton used to close the tube as formerly. In this way the proper degree of moisture is secured to prevent the drying of the swabs.

Another most important point for us to remember is that vaccine treatment is not a panacea, or cure-all, destined to supplant all other measures, but that it is a valuable adjunct to be used in connection with the very best physical and medicinal therapeutics which we can prescribe.

As a means to giving you a clearer perspective on the application of vaccine treatment, four illustrative cases have been selected from different periods of life, from early childhood to old age.

The first case was that of a little girl two years and two months old, who had developed a third attack of pneumonia, having previously, when less than ten months of age, developed infantile paralysis (acute anterior poliomyelitis) involving the left arm and left leg and many of the important muscles of the back. The first attack of pneumonia came when she was about fifteen months old, and was very severe, involving the entire back of the left lung, and at one time the outlook was desperate. This illness lasted about three weeks and the lungs cleared well. When twenty-three months old she developed a second attack, with characteristic high temperature, rapid pulse rate and respiration. In this there were areas involved in the front and back of each lung. This also cleared in about three weeks time. Four months later she developed a third attack which showed the physical signs more marked in the right lung than in the left, with high pulse rate and respiration, temperature moderate but rising. The parents and myself felt equally solicitous and discouraged. This was the same instance in so young a child where I seriously contemplated the vaccine treatment, for although the paralytic symptoms earlier manifested had subsided somewhat, she was not in a condition to battle many times more with a pneumonic process. Following my first visit I conferred with Dr. Watters regarding the case, the probability of selecting a suitable vaccine, and the possibility of any untoward effects to follow its use. As the result of this conference at my second visit I administered hypodermically one minim of pneumococcus vaccine. (Strength one hundred million per c. c.) This was repeated at the intervals and in the doses outlined by Dr. Watters, usually only one minim was given each time. While the physical signs showed at the end of her first twenty-four hours in this illness only a small consolidated area in the center of the right lung posteriorly, at subsequent visits she was found to have developed more physical signs of trouble in each lung. The same remedies were employed in this illness as previously. The vaccine treatment was continued as suggested by Dr. Watters, with the result that in nine days from the time of the first dose of vaccine she was practically well except that there was still some trace of the pneumonic process, particularly in the upper half of the right lung posteriorly. Her temperature after my first visit, at which it

was 100.6, pulse 132, did not rise above 100.4, and pulse not above 112. The results were certainly of a wholly favorable character, and parents and physician were correspondingly happy at the outcome.

The second illustrative case was one of erysipelas in a young woman who had previously been in good health. On April 5, 1911, at my first visit she had a temperature of 103.4, pulse 132, and there was a wide-spread area of swelling and redness extending from the bridge of the nose to either side of the face. Her first symptoms had appeared about twenty-four hours before. This gave every indication of being a severe and wide-spread infection. In addition to the use of remedies and soothing local applications, she was given that afternoon 5 millions streptococcus vaccine. The next afternoon her temperature was unchanged, pulse 120, the involved area extended from the bridge of the nose well out to the sides of the face, but she did not show any marked cerebral symptoms. The same treatment was continued and she was given 8 millions steptococcus vaccine. The following morning her temperature was 102.4, pulse 112; she was given 10 millions streptococcus vaccine that evening; temperature 101.8, pulse 102. Next morning temperature was 99, pulse 84. The same general treatment was continued and she was given 5 millions streptococcus vaccine. That evening her temperature was 99, and pulse 88; was very comfortable; the trouble not only had ceased to spread during the previous 30 hours, but signs of inflammation were rapidly subsiding. The following morning the temperature was 98.4 and pulse 88. Progress from this time was uneventful; desquamation was widespread and thorough. As a precautionary measure she was given 5 millions of the streptococcus vaccine three days later. In this instance the result of the streptococcus vaccine, in cutting short the duration and severity of the disease, seems unquestionable.

The third instance was a gentleman only thirty years of age, far advanced in pulmonary tuberculosis, where he was having daily severe chills with a subsequent rise in temperature to 103 or to 104, and a corresponding pulse rate, soon followed by severe protracted sweating. The temperature curve and clinical features somewhat closely resembled those of the daily phenomena in a quotidian intermittent malarial fever. Examination of the sputum at this time showed not only the presence of the tubercle bacilli and a few pneumococci as had been the case throughout his illness but large numbers of the streptococcus. This was a most severe case of secondary infection. The outlook for the case was hopeless, but as all medicinal and adjuvant treatment proved unavailing in relieving the patient, in conference with Dr. Watters it was decided to try the streptococcus vaccine. The patient was obliged to administer the vaccine himself, having first been shown the technic by a district nurse, as he was residing over fifty miles west of Boston. The vaccine was continued in the doses and the intervals suggested by Dr. Watters, with the subsequent results that very soon the severity of the paroxysms diminished and in a com-

paratively short time the patient had a maximum temperature rarely over 101, often only 100, simply a feeling of coolness, little if any excessive perspiration, and a great diminution in the amount of sputum. The subsequent course of the case was slowly and surely downward, but the gratitude of the patient for that which to him seemed almost miraculous relief, was to my mind a fair index of the value of the treatment.

The fourth case was that of a gentleman eighty-two years of age, who had exhibited at intervals for nearly a year symptoms of what is commonly termed "angina pectoris." He also had been formerly afflicted by severe attacks of bronchitis, usually of six weeks' duration each. I saw him first in the attack of bronchitis under consideration, on July 5, 1911. His temperature was but little elevated, his pulse at times was as low as 42. Both lungs were exhibiting medium and coarse moist rales posteriorly; he was sleeping but little. Remedies as indicated were employed, the patient was kept as quiet as possible in bed, but although his environment and treatment was affording some benefit, his progress was very slow. Examination of the sputum showed the presence chiefly of pneumococci in large numbers, and after due conference with Dr. Watters, the patient was given on July 15 three minims of pneumococcus vaccine (strength 25 millions per c. c.). This was repeated at intervals of two or three days, and the patient's progress very markedly accelerated, so that at the end of three weeks from the inception of his attack he was practically well, a very happy man and a firm believer in the efficacy of vaccine therapy.

THE APPLICATION OF BACTERIAL VACCINES TO SURGICAL WORK.*

By George R. Southwick, M.D., L.R.C.P., Lond, M.R.C.S., Eng.

The laboratory laid the foundations of asepsis in surgery and is contributing to a new and scientific development in medicine. The results obtained seem likely to materially help the surgeon. That miracle of the infinitesimal, the doctrine of immunity, the physiology of the white blood corpuscle, the opsonins, the toxins and the antitoxins; the antibodies, the antigens, *etc.*, in the blood serum and the harmonies which often determine the balance between health and disease, are all studied with the deepest interest. The pathologist sees in them new conceptions of disease and of those delicate, elusive, subtile processes of cell nutrition and metabolism. The physician watches with increasing interest the possibility of a real scientific practice of medicine. The great advance in medical science has not been along the line of antipyretics, coal-tar derivatives, or synthetic remedies. It has been intimately associated with infinitesimal agents which can be recognized only by the most delicate tests of physiology. Present day medicine measures by the results obtained and not by the quantity taken.

The remedial agents derived from blood serum, or bacteria,

* Read before the Massachusetts Surgical and Gynæcological Society, December 13, 1911.

are classed as antitoxins, or antibodies; sera and vaccines. Antitoxins and sera are produced through the horse and when injected subcutaneously supply the patient with antitoxin or antibodies already formed in the horse serum. The physician thus produces passive immunity in the patient. Bacterial vaccines are cultures of bacteria killed by heat and suspended in physiologic salt solution. The injection of bacterial vaccines stimulates the body of the patient to produce a large supply of opsonins to prepare the bacteria for ingestion by the leucocytes, or the formation of antibodies to combat the disease. This is called active immunity.

Rules for the selection of a serum or a vaccine are not sufficiently defined, but, in a general way, sera containing a supply of antibodies already manufactured by the horse are best adapted to general infections when the patient can not produce his own antibodies. These are the exceptional cases and are chiefly those where the early injection of a vaccine has not been given and the infection has far advanced, in diphtheria and in possible infection with tetanus before symptoms of tetanus have appeared.

Bacterial vaccines are more used for surgical cases and are especially adapted to conditions where the patient can manufacture antibodies in his own body and also for prophylaxis or the production of immunity in healthy individuals, as in the prevention of typhoid fever and for the treatment of localized infections. It is important to note that the earlier the vaccine is used, the better will be the results, as the body of the patient will be far better able to manufacture its own antibodies at the very beginning of the disease than if overwhelmed with the infecting germ at a late stage of the infection. The prophylactic injection of vaccine will not always enable the patient to overcome an infection at the time of operation, as other factors enter into the question, but there are reasons for believing that prophylactic vaccination will increase the immunity of the patient and improve the chances for an uneventful recovery.

Bacterial vaccines are classed as heterogeneous, or stock vaccines, and autogenous. Heterogeneous vaccines are made from cultures of selected strains of pathogenic organisms. Autogenous vaccines are made from cultures obtained from the patient and prepared for injection into the same patient. Mixed vaccines are used occasionally and are sometimes combined with the pneumococcus.

Stock vaccines are used to a great extent, as the infecting organism can not be obtained in many cases when the signs of infection first appear and valuable time would be lost in waiting for material and preparing the vaccine.

Autogenous vaccines are more economical and are always at hand. Special emphasis needs to be laid on the importance of the very early use of the vaccine.

Autogenous vaccines are more desirable when circumstances permit, as they are the same bacteria which infect the patient. It is often desirable to begin treatment with stock vaccine and follow

it up with the autogenous. Autogenous vaccine can be prepared to advantage from pus at the time of operation and used when ready for prophylactic purposes without waiting for signs of infection to appear.

Mixed vaccines are used for infections with two or more germs with pneumococcic infection.

No cases in literature are known to me where any serious harm has come from the use of vaccines or where it has interfered with other therapeutic treatment, but the purpose of the vaccine may be defeated by using too much vaccine and by too frequent repetition of the dose.

The repetition of the dose is determined best by the opsonic index, but this involves time and laboratory facilities at the disposal of comparatively few physicians. The clinical symptoms often are sufficient. The injection is frequently followed by a lower temperature corresponding to the negative phase. The temperature rises again in twenty-four to forty-eight hours, often within two degrees of its former level; a presumably positive phase and a smaller dose of the vaccine can be given.

It is desirable to use a fresh preparation of vaccine, as the question of deterioration with age has to be considered.

The principle of prophylaxis by vaccination is closely allied to conferred immunity, a splendid example of which has been seen in the results of immunizing against typhoid fever the soldiers of the United States army on the Mexican border. Not a soldier so treated contracted typhoid fever.

It is possible that other agents than vaccines, such as ferments and enzymes activated in the presence of calcium, may promote phagocytosis. The writer knows two cases of persistent furunculosis and carbuncles involving considerable areas and of more than six months duration, which both surgical treatment and vaccines failed to materially benefit. The internal administration of yeast was quickly followed by the permanent cure of both patients.

It seems probable that chemical agents may increase the opsonic content of the blood, and if so, why not other remedial agents? The pneumococcus grows poorly in ordinary bouillon culture and soon perishes. Add calcium carbonate to the broth culture of pneumococcus and the culture grows vigorously.

Infections with the pathogenic cocci, especially the staphylococcus pyogenes aureus, appear to be the most amenable to treatment. Infection with the colon bacillus is more difficult to treat.

Vaccines act best when mingled with the blood serum which contains the opsonins. The surgeon opens an abscess, pus escapes, tension is relieved, the abscess cavity collapses, blood serum rushes in and mingles its opsonins with the vaccines present. The opsonic index is raised and the patient improves, even though no vaccine has been given.

This seems to explain the remarkable results sometimes following simple exploratory incisions in tubercular peritonitis. The serum filling the peritoneal cavity has exhausted its opsonin con-

tent. A fresh supply of serum flows in, rich in opsonins, antibodies, or similar agents, and a rapid cure follows. The same is true of many cases of pleuritic effusion, of tubercular origin, which are cured by tapping. Bier's treatment for hyperæmia is founded on it. Cellulitis in its various forms appears to be especially susceptible to treatment by vaccines, and abscesses are in a similar class.

Old sinuses following operation, erysipelas, puerperal sepsis, empyema with pneumococcic infection and even ischiorectal abscesses in tuberculous individuals have been apparently benefited.

Dr. Craig reports many interesting cases successfully treated by vaccines. Amongst others was a man sixty-five years old who entered the hospital at the end of a prolonged spree. He was on the verge of delirium tremens and had a very severe appendicitis. He was in such bad condition that it was considered hopeless to operate and the last rites of his church were administered. He was given a vaccine made from the interior of an appendix removed the day before from a very severe case of perforated appendix, the vaccine being ready for the patient in case he needed it. It consisted of a mixture of streptococci and colon bacilli. The patient made a remarkable recovery, was out of bed in a week and left the hospital four days later.

Dr. Duncan has made recently a strong plea founded on clinical experience for giving drop doses of the patient's own living pus *per orem,* till some sign of reaction or aggravation appears, such as pain in the wound, insomnia, headache or vomiting. Then his directions are to suspend the remedy and to wait until amelioration sets in. This treatment will remind many of the use of nosodes and the much despised Psorinum, about which there were many wordy battles twenty-five years ago.

The importance of the colon bacillus in all infections in the alimentary tract or appendix ranks in importance with that of the pneumococcus in most inflammations above the diaphragm, but less relatively is known about it. Turk fed animals on cultures of colon bacilli and produced quite constantly ulcers of the stomach, duodenum and other parts of the intestine. The favorable results obtained by vaccine treatment suggest its possible application to the early treatment of gastric and duodenal ulcer.

Opinions will continue to differ as to the merits of vaccine treatment in surgery. There are many cases of recovery following vaccine treatment plus surgical aid, which would not be considered as cases likely to recover under the usual methods of treatment without the vaccine.

It may be asserted as axiomatic that with our present understanding of vaccine treatment, the latter should be considered a valuable supplement to surgical aid and subservient to it. It will never excuse the surgeon from the most vigilant asepsis in the operating room, nor in a departure from well established rules of operative procedure, drainage or posture of the patient. On the other hand, the surgeon welcomes gladly any agent which will help him fight his arch enemy, septic infection.

The writer takes pleasure in acknowledging his indebtedness to Prof. Watters for the vaccines prepared by him and used under his supervision in the Homœopathic Hospital, also for the loan of charts of other cases than his own.

† A series of twenty temperature charts illustrating, with the aid of the stereopticon, as many cases of septic infection give an excellent idea of the results of vaccine treatment. The cases include septic infections of hands, cellulitis, abscesses of different kinds, septic wounds, puerperal sepsis, erysipelas, peritonis, etc. All of these cases made good recoveries, and the effect of the vaccine on the temperature of the patient is readily seen on the charts.

Just as good results are obtained sometimes by surgical aid alone, but it seemed in some of these cases that surgery without the aid of vaccine treatment would have failed or convalescence would have been long. Three septic hands with an average of 102.1 degrees when treatment began showed a permanent normal temperature at the end of the third day after using the vaccine. Nine cases of a variety of seven septic wounds of several types with an average temperature of 103.6 degrees subsided to normal on the fourth day after vaccine treatment.

In the four cases of peritonitis, one associated with a suppurating and gangrenous appendix and another with a large fœcal fistula following laparotomy, the average high temperature was 103 degrees, and normal temperature was reached on the ninth day.

The cases mentioned are not selected but are strictly illustrative types of a large number of important surgical cases in which vaccines were used. They show results which warrant the opinion that vaccine treatment is a valuable adjunct to surgical aid which has given a happy ending in many cases where a fatal termination was otherwise to have been expected.

VACCINES AT THE MASSACHUSETTS HOMŒOPATHIC HOSPITAL. *

By W. H. Watters, A.M., M.D., Boston, Mass.

In a brief paper like the present one, it will be possible to merely give a short outline of the work with vaccines which has been carried out and is still being followed in the Massachusetts Homœopathic Hospital. Beginning in the winter of 1906-7, we now look back upon nearly five years of labor and experience. This time has brought many trials, but it has also brought greater pleasures and satisfaction at the results attained. About two thousand cases have been treated in all, embracing a great variety of conditions in all ages, both sexes, and divers conditions. As a result, certain deductions may be made, following

† A brief summary of the more important cases shown by the stereopticon is given as space does not permit publication of the charts and remarks in detail on them.

* Read before the Massachusetts Surgical and Gynæcological Society, December, 1911.

directly upon personal experience rather than from theoretical considerations. I fully appreciate that the following is a very hackneyed method of treating the subject, but as it is a personal testimony rather than a compilation from others, it may be pardoned. The vaccine treatment is, of course, one introduced for the purpose of combating infectious diseases and is, accordingly, indicated only in such.

Probably of all diseased states treated by this new method, no one has given so uniformly successful results as has furunculosis, not only in abating the severity of individual abscesses, but in eradicating the tendencies toward remissions or recurrences. So true is this that I do not look for criticism from any source from the sincerely believed statement that vaccines should be given preference over all other therapeutic measures in every case of furunculosis, using various adjuvants, surgical or otherwise, only as the individual needs seem to require.

Other forms of staphylococcus infection yield in varying degrees. Septic wounds, accidental or post-operative, usually show very satisfactory results following the use of either autogenous or stock vaccines. Sometimes the results are very brilliant, and less startling benefit is seen in so many instances as to well justify the use of the method as routine. Acne, pustular in type, very frequently yields to this vaccine, and when with it is combined that of the acne bacillus, many more cases are rendered amenable.

When we pass from staphylococcus to streptococcus we at once go from a fairly settled field to one full of doubts and uncertainties. Some are very pessimistic concerning results in these infections, and as these are practically always acutely virulent, the skeptics are usually those who disclaim for vaccines any benefit in acute infections. My personal experience cannot allow me to join with those but, on the contrary, forces me to become allied with those conservative enthusiasts who claim that when properly administered, streptococcus vaccines, even stock preparations, are capable of doing much good. Here, however, the autogenous emulsion is always preferable, when it can be obtained.

Streptococcus wounds, accidentally received or even post-operative, have shown such gratifying results so frequently that all possibility of coincidence or chance seems to have been eliminated. In the majority of cases the treatment is used in conjunction with other recognized methods, surgical or otherwise, and the results have been superior to those others where vaccines have not been used. I fully agree with Ross in the beneficent effect of vaccines in erysipelas. It is now adopted as a routine treatment for cases occurring among the nurses or employees of the Hospital and is usually employed in all others. By it the disease is shortened, the severity decreased, and the mortality much lessened.

Not a few cases of peritonitis due to this infection, in which the prognosis was extremely grave, have rapidly and steadily

become changed into happy convalescents. The same can be said of various forms of puerperal sepsis, particularly before the organisms have reached the blood and are producing a metritis, a cellulitis or a phlebitis. And even in some cases of general infection, recovery has occurred after all hope was gone. In my opinion vaccines carefully administered in minute doses by an experienced immunizator have a decided place in the treatment of puerperal infection and will not infrequently serve to change the tide from an advancing to a receding one.

I have reported elsewhere results in immunizing nurses in scarlet fever wards against that disease. As there reported, after two years work, the results show a disease morbidity of four per cent. among those inoculated, compared with one of thirty-six per cent. among those not thus treated. No claim is made that streptococcus causes the disease. It is, however, a very common secondary infection.

Another secondary infection very often favorably influenced by vaccines is pulmonary tuberculosis. Here temperature may be lowered, cough decreased, physical conditions improved and general feelings of well-being much increased. One cause of frontal sinus suppuration persistent for years cleared up completely under vaccines, and with no other treatment.

Of minor importance to all but the possessor are those various inflammatory disturbances of the larynx, pharynx and bronchi. These are frequently very amenable to autogenous vaccine.

Of pneumococcus infections, pneumonia is the most important. Dr. Leary will doubtless speak of this topic, and I will merely say that I am convinced of the efficiency of vaccines in this disease when properly and carefully used. Pneumococcus infections elsewhere, bronchitis, laryngitis, empyema, pyorrhœa, alveolaris and otitis media, offer very favorable fields for the vaccine therapeutist. Involvement of the accessory nasal cavities has not been very encouraging, probably on account of the difficulties of procuring adequate drainage.

A field that somewhat surprised me is the one now opening, consisting of those cases of arthritis that at times follow tonsillitis or other pharyngeal infection. Not a few cases have gone on to complete cure after unavailing treatment by routine methods. Two cases of chronic asthma have been treated, both with excellent results. One of these, a physician of wide experience, was rendered comfortable and further attacks warded off, after thirty years of unavailing attempt at relief.

The subject of tuberculosis is an enormous one, and cannot be adequately considered here. Tuberculin in dosage of .0001 mg. to .001 mg. has, in my hands, been followed by much benefit. In pulmonary tuberculosis, associated with streptococcus or pneumococcus in the intestinal forms, with colon vaccine in involvement of the lymph nodes, the kidney or the testicle, tuberculin has given very encouraging results. In addition, two cases of tuberculosis of the meninges, so called by the best diagnosticians of

both schools, resulted in recovery after tuberculin. It is somewhat uncertain in just what form of tuberculosis some kind of vaccine is not indicated, unless it be the acute miliary type.

Colon vaccine in pyelitis and in cystitis gives excellent results. In various forms of entero-colitis, even the ulcerative type, much benefit has followed its use. Peritonitis due to colon infection has been repeatedly treated with vaccines with good results. A small number of women with endometritis associated with this organism have not been apparently much benefited.

Vaccines in typhoid prophylaxis are of the utmost importance. My opinion concerning their value in therapeutics is probably well known to all. During the past two and one-quarter years no fatal case of typhoid treated by vaccines has occurred in the Hospital, against about a ten-per-cent. mortality among those not thus treated. The method is steadily gaining favor.

In gonorrhœal arthritis there is an all but universal consensus of opinion that gonococcus vaccine should be the first routine treatment and will often render all others unnecessary. In other forms of the disease various results have been reported, some obtaining amelioration in orchitis, in epididymitis, in vesiculitis, and in divers other locations. This question is not yet accurately determined. In acute urethritis the possibilities at present seem to be slight.

A few infections with bacillus pyocyaneus have been treated, apparently successfully, but the cases are too few to permit of any deductions.

One interesting subject now under investigation is the immunization of surgical patients against post-operative infection. While the great improvement noted in surgical technic during the past two decades has largely eliminated the question of sepsis, nevertheless, there is always the latent possibility of such, and in instances all too numerous this becomes a very active matter. In a moderate number of individuals we have immunized against staphylococcus and streptococcus and at times against bacillus coli (abdominal and vaginal operations). Following these has been absolutely no trouble from sepsis, although they were cases picked for their apparent susceptibility to such. In one a hæmatoma developed in the abdominal wound and from it were isolated both staphylococci and streptococci in numbers. The surgeons predicted an extensive infection, with probable secondary operation to clear out the infection. It did not cause any trouble, however, did not become purulent beyond the already present blood, and merely retarded convalescence for about a week. Further work in this line seems well indicated.

These somewhat irregularly collected statements may suffice to give in a very schematic manner my opinions concerning vaccines, derived from personal experience at the Massachusetts Homœopathic Hospital. And as this was, I believe, the aim of the chairman in requesting the paper, I have now complied with his request and will give place to others bringing their personal testimonies from our allied institutions.

THE ATTITUDE OF THE AVERAGE PHYSICIAN TOWARDS VACCINE THERAPY, AND ITS REAL VALUE IN MEDICINE.*

By H. W. Nowell, M.D., Assistant Pathologist to Massachusetts Homœopathic Hospital.

Mr. President, Ladies and Gentlemen:

The subject of my paper this evening is a broad one and might be far better put before you by one more experienced than I. However, the few years I have devoted to the subject of bacteriology enable me to draw a few conclusions, the value of which I will leave for you to judge.

I realize that this subject was not a part of the older physicians' study, and many have never taken the pains to even understand the theory, let alone the practical side and application.

Vaccine Therapy is looked upon by many of you as a something unnecessary. I believe this is due to a lack of light upon the subject. I often hear this expression, "I have never seen any results from the use of vaccine, not obtained by the indicated remedy." This may be true, from your standpoint, but I believe that in vaccines you have a valuable aid, and, when the same judgment and care is used as in prescribing your remedy, in many cases your results will be far better. Right here I want to say from careful observation that most of the vaccine prescribing is done by those who are wholly unfit to do so, and after everything else has failed. Vaccines were never intended as a cure-all. Patient study and preparation are necessary. Special knowledge is required if you expect to get results. Their improper use makes them unsafe. They should be administered only by those who have made a special study of the subject.

The pathologist is a conscientious physician. He is not seeking for glory. It is a credit to you to use him if his remedy is indicated. I do believe that you are the one to keep records of the cases where vaccines are used and report the same. You are better able to judge and compare the cases. Do not wait until everything has failed, then expect vaccine to save your patient. Use it with your other remedies as a part of your treatment if you think the remedies necessary.

Dr. W. B. Konkle's article in the "Medical Record" of October 7 shows the attitude of physicians toward the development of new ideas in medicine. He says, "They have, indeed, manifested betimes the grossest intolerance of reform and progress. The greatest hostility toward improvement and advancement in medicine has been encountered within the medical fold itself. Such pathfinders as Paracelsus, Vesalius, Harvey, and Jenner have at every move and turn found themselves confronted by the swords of their brethren. But in all their hanging back and holding back, doctors are markedly conscientious. It has been a question of lack of light. Honesty unillumined is a blind gladia-

* Read before the Boston Homœopathic Medical Society, November 9, 1911.

tor. Conscience operating in God's open day is a true and worthy master. But there is no tyranny more stern, more inflexible, more inexorable than the tyranny of a benighted conscience. Liberty is a daughter of the sun."

Now as to the real value of vaccine in medicine, simply this: vaccine, properly made, dosage used with good judgment, determined to a certain extent by each individual case, and surely indicated, will give the same percentage of results that one might expect from careful prescribing.

First I will take up the value of bacterial vaccine as used in preventive medicine. You are all familiar with the fact that the United States, the English and German governments require their soldiers to have prophylactic treatment against typhoid fever. Surely such treatment would not be allowed by our government if after careful experimentation the results were not decidedly in favor of vaccine.

In speaking of prophylactic treatment with vaccine, we mean that we produce artificial immunity against typhoid fever, or, as we have apparently shown at our Massachusetts Homœopathic Hospital, West Department, against scarlet fever, by giving the nurses immunizing doses of streptococcus vaccine, and from the laboratory we have seen many instances from the other vaccines, such as S. P. A. and colon. Great care and good judgment must be used in giving this treatment for prophylaxis. I believe individualization must enter in, to a degree. It is a dangerous thing to produce a state of anaphylaxis, and this condition may be brought about by too large and too frequent inoculations. This state is to be feared, as all resistance is at its lowest point, and any infection may go on without check.

You all know the theory of the opsonic index and its practical value. Now if we find a patient's index low to a certain species of bacteria and this patient is given a bacterial vaccine which raises this index to normal, certainly this is sufficient evidence that there is some virtue in the use of vaccines.

Now how does this substance act in the body? There have been numerous theories, but the theory of Wright and Douglas has been accepted as the most plausible. They point that there are certain substances in serum which so affect bacteria that they are more easily taken up and disposed of by the leucocytes. It is now generally accepted by most investigators that both serum and leucocytes contain substances which, acting after the manner of ferments, are able to dissolve bacteria. Probably the cells of the body secrete the protective substance by means of which bacteria are destroyed. The action of the vaccine is to raise this resistance to the highest point. Next arises a most important question: What advantage has the bacterial vaccine over the indicated remedy? It seems to me this is one which is apparently satisfactorily answered on the side chain theory. The fact that certain substances (bacterial toxins in particular) give rise to the production of antibodies, whilst others, such as the alkaloids,

glucosides, mineral poisons, poisons of simple constitution, such as alcohol, etc., do not (this may be taken as fairly proved), certain researches which go to prove the existence of certain anti-bodies to morphine, alcohol, etc., being inconclusive.

The explanation is founded on differences in the way the various substances form combinations with the protoplasm. This latter has, as an integral part of its constitution, certain receptors which have a specific combined affinity for proteids, and we must imagine the union of proteids, whatever be their nature, as taking place by a direct union with these receptors. Other substances, however, need not, and in all probability do not, unite with the protoplasm in this way. Ehrlich, basing his theories on the fact that certain alkaloids and other substances can be extracted from their combinations with organic matter by simple means, has suggested that the union of non-proteid poisons with protoplasm is less firm than in the other case. This seems doubtful, for nothing could be much firmer than the combination of nitrate of silver or similar bodies with the tissues, and we know as a matter of fact that the toxin-protoplasm compound is not necessarily a stable one. Emulsions of tissues will abstract tetanus toxin and retain it on washing but give it up again in a free state when allowed to stand for some time in contact with normal saline solution. However this may be—and the point is not of importance—we may readily admit with Ehrlich that it is highly probable that proteids unite with protoplasm in a manner fundamentally different from alkaloids, etc. The former process follows on physiological lines, whilst the latter is a pathological process entirely and one which has no counterpart in normal nutrition. If this is the case it is easy to see that "chemical" poisons cannot be expected to give rise to the production of anti-bodies. It is true that if a cell is already secreting anti-bodies, we might expect that a substance which stimulates the general metabolism of the cell and increases the rapidity of the vital processes might temporarily increase this production, and we have seen that this is the case with pilocarpin, which stimulates the production of diphtheria antitoxin in an immunized horse. This is an entirely different process, and one that is easily explicable on the side chain theory. It is necessary, therefore, to determine whether all the substances which give rise to the production of anti-bodies on injection are proteids. We must admit at the outset that in many cases this cannot be proved; the chemical constitution of toxins, enzymes and many other entigens is as yet unknown. But in the cases in which the chemical composition of the primary substance is ascertained we find it to be invariably of proteid nature (bacteria for example) and will, on injection into suitable animals, give rise to anti-agglutinins. We may almost go a step farther and say that all proteids, of whatever nature, when injected into suitable animals, will give rise to anti-bodies. In fact, some writers actually enunciate this as a law. In summing up the apparent facts, why is it not far better to use bacterial vaccines

which act along physiological lines than the remedies which must act through a pathological process?

The general condition of the patient must be greatly improved under this treatment over the older methods, as it assists nature to perform its normal function without first tearing down, or, in other words, with causing pathological processes to set up in parts of the body remote from the primary lesion.

Case I. Catherine D., age 5 years, was brought to the out-patient department of the M. H. H. Jan. 28, 1911.

Family history, negative. Past history, frequent attacks of what was first diagnosed as conjunctivitis, later tuberculosis of the conjunctiva. The mother of the child was told that probably the case was incurable, and palliative measures to hold inflammation in check was all that could be done,—certainly not a very encouraging outlook for mother and child.

Present history:—Lower lids of both eyes somewhat thickened, upon everting the lids they were found to be badly inflamed and partly covered with grayish-red granulations. Upon careful inspection an ulcer was found, located in the tarsal conjunctiva of the left lid with a sort of pannus extending partly over the cornea.

Von Pirquet test proved to be positive.

Tuberculin was the only remedy considered. This was prepared at the pathological department of the M. H. H. by a method widely different from the tuberculin ordinarily used by others,—especial care being taken in running up the dilutions.

Treatment began with one ten-thousandth of a milligram.

February 4, 1911, this was repeated, with gradual increasing doses, once a week, until four ten-thousandths of a milligram was being given. This was continued once a week until September 1. Since that time the child has received treatment once in two weeks.

The eyes began to show improvement from the beginning of treatment. Records have been carefully kept of this case. March 18 much improved, April 22 mother says child is very much improved, August 19 from all external appearance child is perfectly well, eyes show nothing of importance; on inspection, the lower left lid near the inner margin slightly puckered. Occasional treatment will be given for several months.

This is one of four cases with similar results.

Case II. Miss D., aged 19, came to the out-patient department for treatment July 29, 1911.

Family history:—Father died from tuberculosis, one aunt has tuberculosis at present time; mother, brother and sister in good health.

Past history:—Discharge from left ear for several months, slightly deaf in left ear since three years of age. Sixteen years ago operated upon for tuberculosis of the bowels.

Present history:—General malaise, losing flesh, weight 97 lbs., constant discharge from left ear. Culture from ear shows numerous tubercle bacilli. Von Pirquet positive.

Treatment July 29, tuberculin, one ten-thousandth of a milligram. This was repeated once a week, gradually increasing to five ten-thousandths of a milligram. After several treatments an abscess formed in his ear, breaking and discharging freely for nearly two weeks. The patient is still receiving treatment. The present condition of patient good, absolutely no discharge. She says her health was never so good as at the present time. Weight 112 lbs.

Case III. Miss E., aged 32, came to the out-patient department April 26, 1911.

Family history, negative.

Past history:—Always troubled with constipation, constant inflammation of mucous membrane at margin of teeth, with frequent so-called gum boils, discharging pus. A well-marked case of pyorrhea of ten years' duration.

Present history:—Membranes of mouth badly inflamed, pus discharging about teeth of lower jaw, teeth loose, headache, general condition poor, constipation. (In going over her diet list I found meat to be the principal food.)

Treatment:—Culture was made and showed numerous pneumococci and streptococci. An autogenous vaccine was prepared, and every third day she received treatment, alternating strepto and pneumo, starting with 10M, increasing to 25M. The meat diet was cut down one third, the intake of water increased. This case has shown gradual improvement from the start and was discharged as cured October 25, 1911.

Case IV. Mr. H., aged 35, came to the out-patient department for treatment August 5, 1911. Family history: — negative. Past history: — negative.

Present history:—Had an attack of gonorrhea five months ago. Recovered from acute condition. Later a slight swelling of scrotum, followed by pain and soreness, the trouble apparently being in the left testicle. This persisted for a long time.

Treatment:—Gonococcus vaccine every third or fourth day, 45M each time. This patient has shown gradual improvement from the beginning of treatment. At the present time there is no swelling or soreness of testicle, but the patient is having pains and some stiffness of joints. This, too, is apparently responding to vaccine treatment, which will be kept up for a time.

Case V. Mr. P., aged 35, came to the out-patient department for treatment January 18, 1911.

Family history:—Negative. Past history:—Swelling of cervical glands, extending from both sides to mid line, all sizes, some hard, others soft, indurated, and discharging freely. Had been told operation for removal of glands absolutely necessary. Refused operation.

Present history:—Glands found as above described.

Von Pirquet test positive.

Treatment:—Graded doses of tuberculin, starting with one ten-thousandth of a milligram. This was carried up to six ten-thousandths of a milligram; patient at first receiving treatment every third or fourth day, later once a week. This has been kept up to the present time. There has been gradual improvement from the beginning of treatment, the discharge growing less, with a distinct absorption of the glandular contents of those not broken down. General health improved; has gained twelve pounds in weight. October 11, not a gland remains so far as one can discern, a small scar at the right side of neck and one in the mid line; otherwise no evidence.

Mr. P. will continue this treatment for at least another six months.

Following this paper, Dr. Watters read one on the subject "Vaccines in Chronic Diseases," which will appear elsewhere.

DISCUSSION.

In discussing Dr. Watters' paper, Dr. Sutherland asked what sort of vaccine was used in the cases of chronic rheumatic disorder mentioned.

Dr. Watters—I would not have it understood that we advise vaccines in rheumatism generally, but there are cases that seem to have some association with tonsillitis, or some infection of that nature. We have made cultures from the throats in these cases, and almost invariably we have found pneumococcus. Accordingly, vaccines have been prepared for this condition.

There was one patient out of town, an old chronic rheumatic of years' standing. Everybody in town had had a go at her with no effect whatever. The vaccines did so much for her that she sent seven or eight patients for the same treatment. The vaccines practically cured her.

Dr. Sutherland,—"You mean that germs are living in the throat for a number of years in a case like that?"

Dr. Watters,—"Apparently they had something to do with the cause. Of course we know that for gonorrheal arthritis the proper treatment is vaccines."

Dr. F. P. Batchelder,—"I am reminded of a remark that our dear Dr. Conrad Wesselhoeft made to me something like fifteen years ago when he saw a case in consultation with me and advised in that condition of obstinate vomiting the administration of the homœopathic remedy hypodermically. He said to me, 'Not so very many years ago I reached the point where I was convinced that the time was not far distant when all medication would be administered hypodermically.'

"Regarding these secondary infections in tuberculosis, particularly of the pulmonary form, I stand appalled at the facts that have been thrust upon me as I have studied cases and had the sputum examined. To be sure, those cases have been few, but the evidence seemed to me conclusive in a case of secondary streptococcic infection where the patient was having a cycle almost duplicating the cycle that we get in a malarial infection—chill, fever and sweat. I had a case where the wife and two little ones as well as the patient were turning to me, asking if something more could not be done. To be sure the case was hopeless—something to undertake with fear and trembling. The results I am sure were more than my wildest dreams could have expected. To see the temperature, which had been running 104 or 105, maximum, practically disappear, so that the evening temperature was sometimes only 99.5 or 100—to see all those intense symptoms disappear, it seemed to me was something that furnished food for thought.

"Another case had been treated by a physician of the other school, and

so far as I could learn the patient had been taking creosote in doses sufficiently large to absolutely upset his digestion. I asked Dr. Watters to make a careful examination of the sputum, and it showed almost wholly pneumococcus, with some tubercle bacilli present. In this case the wife and sister who watched this patient were convinced that his last weeks were made more comfortable by that treatment. His temperature, which had been running 102.5 and 103, declined to 100.

"Just a word about cases of chronic rheumatism. I was approached by a lady somewhere in the vicinity of 75 years of age, who wanted to know about this new treatment for rheumatism. She had a friend who had had treatments and was practically well. She had been to a physician in Boston. I told her I didn't know anything about it, but I made inquiries and it seemed wise to turn that patient in the direction from which the reliable information had come. Accordingly I arranged for her to meet Dr. Leary, of Tufts Medical School, and had him carefully study the case. He examined the blood and urine and made cultures from the tonsillar region, also from the gums, as she had Rigg's disease. He found there pneumococcus predominating, also staphylococcus. He declined to treat the case, and I was to administer vaccine. I think that patient received doses larger than Dr. Watters has mentioned. In all she received something like fifteen inoculations, extending over a considerable peiod of time. She was impatient and got discouraged. I was inclined to blame somebody, because she had not been gaining as fast as her friend. She went on her summer vacation and the following winter came back to me with another complaint. It was rather suggestive that my maid who attends the door should remark to me afterwards,—"What has happened to that lady? Why, now she goes down the front steps like a bird." Sure enough, she has now reached the point where she doesn't say anything about her rheumatism, and the condition of the gums has remarkably improved.

"This also furnished me with food for thought. I referred the case to the source from which the information came, with the results I have stated to you. There is something for us to think about and study and follow out."

Dr. Lapham.—"I was very much interested in Dr. Watters' paper, and I think anyone who has had much to do with tuberculosis patients knows that in tuberculins and vaccines we have something which is of great help. Tuberculin is not curative, to my mind. As a matter of fact one sees very little change in the physical signs after using tuberculin even over extended periods. I say it is not curative. It certainly, however, does render greater immunity. It is surprising to see the change it will make in patients after it has been used for a period. The first thing they tell you is that they are feeling so much better. A great many express it that they feel as though taking a stimulant. A lady who has been taking tuberculin for three months came to me afterwards,—"What has happened to that lady? Why, now she goes the last two or three months. She said she felt as though she had been taking too much exercise. She had been walking 12 or 15 miles a day. She said, 'That tuberculin makes me feel too well.' She noticed a vast change in the time she had been taking it, though she had been under regular treatment before for twelve months.

"That is the general testimony that one gets from patients who are taking tuberculin, but in physical signs you do not get much change.

"As to the use of tuberculin and the kind of cases in which it should be used, I think my experience has been a little different from Dr. Watters'. I have not found it useful in any cases which have run any temperature at all. I found it most useful in afebrile cases. It might be useful combined with physical treatment in cases with slight temperature, but I think as a general thing it rather aggravates than helps.

"Vaccine, on the other hand, shows improvement in the physical signs, and in the diminution of moisture in the chest. It is a great aid in reducing temperature. It is not an invariable rule that these cases may need either treatment, but there are a sufficient number of favorable cases to warrant trying it in nearly every case of tuberculosis. I don't know what kind of cases to say it should not be used in. Practically every case is a good subject for its use.

"I have used Koch's old tuberculin in 75 cases with very good results. It would seem as though the value of the tuberculin is in direct proportion to its virulence. We know that Bacillus Emulsion is dangerous if not used with extreme care, but probably because of the fact of its virulence it certainly does show results.

"I could relate a good number of interesting cases,—two particularly which show the use of tuberculin. Six or seven years ago when we were first beginning to use tuberculin to any extent, a woman came to the Rutland Sanatorium with tuberculosis. As you know, it is very common to have cases with any activity at all run a temperature at the time of the menstrual period. During menstruation her temperature was 101 and 102, and oftentimes she would remain in bed during that week, but the other three weeks of the month the temperature would be normal. She expectorated a great deal and had night sweats. She also had extremely severe menstrual cramps, which made life hardly worth living for her.

"I began the use of Koch's old tuberculin, and two unusual developments followed. In the first place, the next menstrual period was easier and the temperature was lower. The second period gave very little pain, and the temperature instead of going up to 102 went up to 99.4. The third period was absolutely free from pain, and from that time on she has never had any menstrual pain and no temperature whatever. She had previously been losing weight, but after taking the tuberculin she increased in weight. She gained in the next month 40 pounds. She is now back at work on Commonwealth Avenue, and in the summer is at Magnolia. She has added 60 more pounds to her weight and is the picture of health. Tuberculin did everything for that case.

"The other case was a patient from Hartford, a furniture dealer. He had run down very rapidly, and for four months had gone from bad to worse. We began tuberculin with him and continued six months, and the results were just as gratifying as in the previous cases. He went back to his work in Hartford, and has been there seven years, and is perfectly well. This is the only case in which I have seen diminution in the physical signs. I don't believe tuberculin cures the disease at all. I think the result is increased immunity, which manifests itself in the diminution of symptoms and in general well-being. Another thing—patients do not catch cold as easily as before. They are able to do more. From walking fifteen minutes a day they can walk ten miles a day without fatigue. That is the result you get with tuberculin. With vaccine you get an improvement in the degree of moisture which you do not get with tuberculin. Dr. Watters has spoken of his results in intestinal tuberculosis. I do not know of anything in drugs that will do any good in that condition. You are between the devil and the deep sea in treating it. One the one hand you have an intestinal condition which absolutely prevents proper assimilation, and on the other hand you have a wasting disease which absolutely requires not only a normal amount of assimilation but an increased amount;—in other words, the patient has to assimilate more food. I have not had the privilege of seeing any results in such cases."

Dr. Sutherland,—"I would like to ask one question. I would like to know the difference between tuberculin and vaccine made from tubercle bacilli."

Dr. Watters,—"Tuberculin is a form of vaccine. Vaccine is an emulsion. Tuberculin is used in very much smaller doses, but it is a vaccine."

Dr. Sutherland,—"I would like to corroborate some of the testimony I have heard tonight concerning the value of vaccines. I am impressed, but I have not made any extended study of them. The theory as I understand it appeals to me, and it seems to me that the practice is a thing that should appeal to any one. I feel, for instance, that I should not be doing the right thing by a typhoid fever patient if I did not administer vaccine just as soon as I could get it. Within two years I have treated and have seen a good number of typhoid fever cases, and while some of my colleagues do not believe that vaccine treatment is particularly useful, I must say I feel that it is useful. I think in an average case of typhoid fever, instead of having the fever run for four weeks, we are justified in claiming that the course of the

disease is cut down to three weeks. I think the temperature is reduced rather quickly by the use of vaccine,—much more quickly than it can be reduced in any other way, and much more quickly than Nature is capable of reducing it, because the temperature is not going to be reduced much until the fourth week. I do feel that typhoid is decidedly benefited by the use of vaccine, and I say once more, I should feel that I was not doing the right thing by my patient if I withheld the possible benefit from vaccine. I have also used the remedy that seemed to be indicated—bryonia, arsenicum, opium, and I have used with decided benefit vaccine from the laboratory.

"In regard to the rheumatic problem that has been suggested tonight,—I think we can differentiate very easily the kind of so-called rheumatism that the vaccine treatment is useful for. If we have a case of infectious arthritis and can trace it to a probable infection through the tonsils, and can find pneumococcus or any other sort of germ coating on the tonsillar membrane, I think it is all right to prepare a vaccine to use, but there are other cases that we cannot trace to any such infection. In such cases careful examination of the patient, more particularly careful examination of the urine, will show that the metabolism is away below normal and that the urea is decidedly deficient, and we have a very bad chemistry. In such cases I believe there are other agents that will restore things to their normal condition,—such as high frequency. I don't think in such a case it would be right to take any germs you may find in the tonsillar or pharyngeal cavity and make a vaccine of the germ from them, because in such cases you have a disordered chemistry of the body to deal with.

"I want to rejoice in the report of the case of tuberculous entero-colitis that was found in Dorchester two years ago. I happen to know that that case presented clinical evidence of what we call tubercular enteritis. It seemed to me about as hopeless a case as one is likely to meet in a year's experience. The prospect did not seem in the very least encouraging—and yet you have heard the report given tonight, that at the end of two years the patient is driving an automobile and having a good time. Probably she has forgotten the desperate state she was in two years ago.

"I would like to hear more of the association of vaccine in scarlet fever. We understand that streptococcus vaccine will produce immunity. I have used streptococcus vaccine in erysipelas with benefit. I do look forward with strong hope that we are going to find something in vaccine therapy in the treatment of a good many serious and chronic cases that come before us in the course of our experience."

Dr. Watters spoke of a case of asthma treated by Dr. Ring with pneumococcus vaccine, with great benefit. The patient was 60 years of age and had suffered for years.

Dr. Packard,—"I feel very strongly impressed that there is a very great deal to this vaccine therapy, and my evidence is that some surgical conditions which used to be operated upon very frequently we scarcely ever see now. They seem to have been removed from the surgeon's field.

"While the vaccine treatment is effective, I believe it is mortally slow. It is not a matter of weeks, but it is months and sometimes years that the treatment has to be carried out. I marvel that the patients are sticking to it, and it often does a lot by that very persistency. Those who want to be cured quickly get tired and give it up.

"In the matter of tubercular cervical adenitis which is common in children and young adults, I have also seen results. I remember operating on a case of Dr. Thomas's for the removal of tubercular glands, and in the course of a few months she would come back with some new ones. That case was cured finally through the administration of tuberculin, following it up for a considerable period. I do not know how this would work with other vaccines with other diseases. The only other case I have tried it in was a case of gonorrheal synovitis. Once in a while I am called to such cases where the swelling comes about the knee, and whenever there is a history of gonorrheal infection I have put such cases on a solution of vaccine with some direct results."

Dr. J. Herbert Moore read an article from the North American Journal of Homœopathy concerning vaccines.

VACCINE WORK AT THE MASSACHUSETTS GENERAL HOSPITAL. *

By Albert E. Steele, M.D., Boston, Mass.

The vaccine work at the Massachusetts General Hospital is done along the most practical lines. The opsonic index is not estimated at all. The dose is given according to the severity of the symptoms of the patient, the patient's general condition, and the estimated strength of the vaccine. The autogenous vaccine is used as much as possible. The vaccines are prepared in the usual way, except that the counting is done with a Helber blood platelet counter instead of the method described by Sir A. E. Wright. Most of the vaccines are heated to 60 degrees C. for a full hour and preserved with one-quarter per cent. lysol. Typhoid is killed at 53 degrees C. in one hour. Gonococcus is not heated at all. In other words, the heat used depends on the organism. All the vaccines are tested before use.

Vaccines are given for furunculosis, gonorrhœal arthritis, and colon infections of the urinary tract. In furunculosis stock vaccines are used unless autogenous ones seem to be necessary, the dose 50—250 millions. My personal belief is that vaccines aid in the recovery of the patient in the majority of cases. The immunity conferred lasts a varying length of time; recurrences are common after six months.

Gonorrhœal Arthritis.—The chronic cases seem to get the most benefit. Even there the immunity conferred is not absolute, and re-infection with gonorrhœa is followed by an acute exacerbation of joint symptoms. In the acute cases the vaccines may do harm if used injudiciously, and vaccines should be given in a small dose if at all. Autogenous vaccines are best.

Colon Infections of the Urinary Tract.—Only the non-surgical cases without stone are treated. In these cases I believe vaccines will relieve symptoms when other means have failed, but will not rid the patient in most cases of the bacilluria. Some cases do recover entirely and show a sterile urine. The reason for this is not exactly known, but may be anatomical. Only autogenous vaccines are used. Among sixteen cases three were bacteriologically and symptomatically well, eleven were symptomatically relieved, two were not relieved.

Typhoid Fever.—Vaccines are used, first, for the immunization of the nurses and ward-tenders and of such other persons as may wish to take the injection. Second, for purposes of treatment. Cases received early are given vaccines. Vaccines are not administered during the height of the disease. They are sometimes given late, after the general condition of the patient has improved, to prevent relapses.

Tuberculosis.—1. *Genito-Urinary.* The B. E. tuberculin is used as an aid to surgery, and in those cases in which surgery is not applicable to the case. This usually means (1) cases of bi-lateral

*Read before the Massachusetts Surgical and Gynæcological Society, December, 1911.

renal tuberculosis; (2) tuberculosis of the bladder, subsequent to a unilateral nephrectomy. Small doses are given, commencing with .0001 and increasing gradually. Reactions are avoided. Tuberculin is also given in cases of cervical adenitis.

Chronic Bronchitis.—Autogenous vaccines are used in cases of chronic influenza bronchitis. These cases are too few in number to warrant any statement regarding the efficacy of the vaccines.

Actinomycosis.—A few cases of actinomycosis have been treated with vaccines.

Chronic Purulent Rhinitis, with Arthritis.—A few cases have been treated, not enough to warrant any definite statement.

APPENDIX DYSPEPSIA.

"Formerly the cause of chronic stomach trouble was always sought in the stomach itself and our therapeutic measures were always aimed directly at that organ. It is only in recent years," says W. F. Cheney, San Francisco ("Interstate Medical Journal," October), "that a chronically inflamed appendix or gall-bladder has been recognized as a cause of dyspepsia. When we see how many observers, working independently in different parts of the world, have come to similar conclusions regarding the existence of an appendix dyspepsia we are forced to believe that the condition must hereafter be reckoned with as one of the possibilities in all chronic disturbances of digestion. If we seek for any typical history of this condition we shall be disappointed," says the author. "Some cases show in their history a striking resemblance to gastric ulcer, with epigastric pain after eating, flatulence, belching, sour eructations, nausea and vomiting, and even hematemesis at times. These are the cases, as Graham has said, which were needlessly subjected to a gastro-enterostomy for 'medical ulcer,' there being found at operation no demonstrable lesion in the stomach. In other cases," says Cheney, "the history is that corresponding to hyperchlorhydria, with heartburn, water-brash, flatulence, and nausea, but without pain or vomiting. It seems probable that many of the cases of 'sour stomach' resisting all forms of medical treatment are due to chronic appendicitis. In fact, this has already been proved in those cases in which the removal of a chronically diseased appendix has been followed by a relief of all symptoms and a return of the gastric secretions to normal. A third group of cases complains of heaviness and fullness after eating, flatulence, belching and regurgitation of food, an inability to take more than a small amount of food at a time. These cases may show a normal stomach analysis and the symptoms seem to be due to pylorospasm. The author has not always been able to get a history that points to the appendix as the seat of disease, but believes that the so-called 'bellyaches' of childhood are verv often due to appendix inflammation which lays the foundation for the future dyspepsia. Another important point in the diagnosis is that the epigastric pain and other gastric symptoms are either excited or increased by exertion. Again, the time of onset of the pain is usually irregular in contrast to the striking periodicity in gall-stones and ulcer. Unfortunately the occurrence of hematemesis, or blood in the stools, does speak absolutely against the diagnosis of appendicitis; for evidence is accumulating," says Cheney, "that the occurrence of hematemesis can no longer be considered as speaking for gastric ulcer in the differential diagnosis between the two."

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M.D.

Case XII. — Diagnosis: Leukemia.

Could we reproduce in color the blood picture as presented on the slide made in this case, there could be no possible doubt as to the diagnosis. The clinical picture was typical and could hardly be mistaken. The peculiar blue cells which we spoke ot as "rose-leaf shape," and which we had not seen before, are spoken of by hæmatologists as pear-shaped cells. Either analogy is good, and although our own is better in this particular case, we wish to correct our error.

It is probable, since there were no nucleated reds, that the myelogenous element in this case was very small. As the lymph glands and the spleen were the most evident points of attack, they classify the disease as spleno-lymphatic leukemia, the most common form.

As etiological factors it is interesting to note the strong hereditary tendency to cancer, and the prolonged nervous strain of working days and caring for her sister through a protracted renal illness.

The duration in this case was about two years, with a remission after the first mild attack of a year and a half. The second attack was sharp, lasting about two months and ending in death. Dr. Fitz says the prognosis of these cases is bad, but with long remissions. Ten years in one of Osler's cases occurred, and recoveries have been reported.

The treatment from the old-school standpoint is, beyond hygienic measures, the use of iodine locally and arsenic (Fowler's solution), either injected directly into the glands or given per os, in increasing doses to toleration. Phosphorus is also recommended, and supportive tonics, quinine, iron, cod-liver oil, etc.

In our own school, Hughes lays emphasis on arsenicum, and suggests picric acid, calcium phosphate, ferrum and helonius.

In this case a solution of gold and arsenic was used in physiological doses without avail. Agaracine 2x somewhat relieved the nervous symptoms.

Case 1—c. For Diagnosis:

The patient is a woman, 35 years old. The family history is unimportant, except that there is a tendency to lung disease, the mother having had chronic bronchitis for some years before her death, and a sister died of pneumonia at thirty-six.

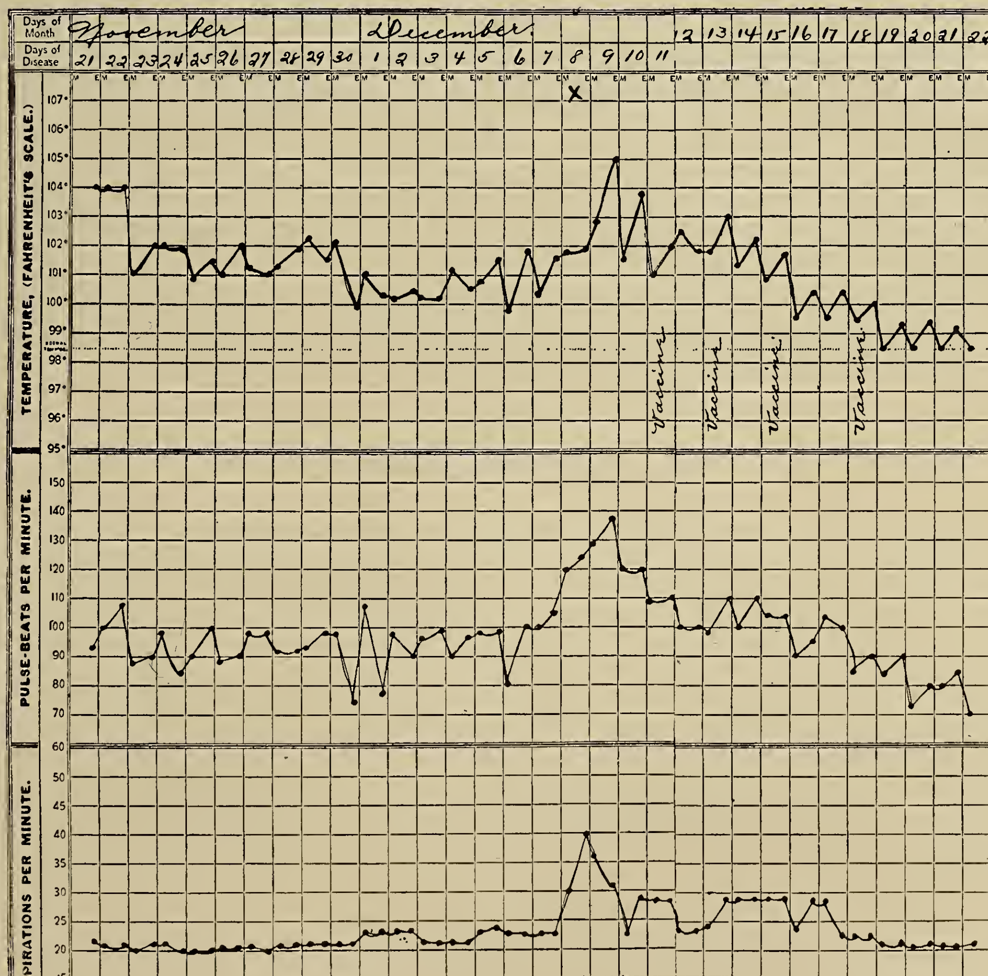
In early life the patient was a delicate, highly-organized girl, but had no severe illness. She was married at twenty-five and has a healthy little girl of six. Last summer was spent in the country, from which she returned feeling unusually well. For several days during the middle of November she felt tired, fatigued easily, was chilly and had a slight temperature. On the night of November 20 she awoke with a severe chill which lasted

some minutes. When seen the next day her temperature was 104, pulse, 90, respiration 24. There was tubular breathing and some fine crepitant rales over the lower left lung, posteriorly. The percussion note was also flat over this lobe. The patient was very restless, and this feature increased and remained a distressing symptom throughout the illness. She moaned continuously, and during the height of the fever was slightly delirious. She also had a hacking cough. There was distressing insomnia, but little pain. Nervous symptoms were marked.

After two weeks it was decided that city quarters were not suitable place for her and she was removed to a suburban hospital. The next day the temperature shot up to 105, pulse 138, respiration 40 and auscultation revealed tubular breathing in the lower right lung in the axillary line. At this time the urine showed one-half gram of albumen to the liter, chlorides present but reduced, a few granular casts and all kinds of cells in abundance.

There was also a slight blur of vision and some engorgement of the vessels of the conjunctiva, which increased and grew more painful, so that she could not open her eyes.

What is the diagnosis and what the treatment of this case?



Dr. J. Walter Schirmer, Needham, Mass., reports the following interesting case:

Mr. C. W. C., aged 33 years. Occupation, merchant. Family history, negative, excepting that mother died of cancer and wife was afflicted with cancer at time of her death.

Patient's history:—Has always enjoyed good health, except occasional attacks of articular rheumatism, involving shoulder joints. Physical examination has shown coarse crepitation of shoulder joints on motion. For two or three days preceding present illness, patient said he had been caring for and treating a pet cat, which had suddenly become paralyzed in its hind extremities, the cause of which was unknown.

Present illness:—Patient came into the office at 7 P. M., and said that one hour previously, as he was about to eat his evening meal, he noticed some pain and stiffness of the jaw on attempting to chew. These symptoms increased so rapidly that it became impossible to eat. He described the pain as being located at a point midway between the lobule of the right ear and the right angle of the mouth. The pain was of a sharp, stitching nature and seemed to come on in spasms of a few minutes' intervals, accompanied by marked contraction of the muscles of the face. About this time there appeared a gradually increasing swelling on the right side of the face just below the ear.

Physical examination showed a soft, spongy tumor about the size of a fig, just below the lobule of the right ear. It was not freely movable; there was no local heat or redness; slight sensitiveness to palpation. While taking the patient's history this swelling gradually subsided and in about an hour had entirely disappeared and all symptoms had subsided except a feeling of slight soreness in the right cheek.

Diagnosis:—Obstruction of right Stenson's duct by salivary calculi, causing retention of parotid secretion at time of gland's greatest activity, namely, at meal-time.

THE COST OF DISEASE.

The Outlook has been publishing a series of articles on "Big Battles Against Disease." The fifth of these articles, published May 13, 1911, is on "The Cost of Disease," and presents convincing data for the statement that the cost from deaths that could be prevented by the adoption of measures already well defined amounts to $750,000,000 a year for the United States. California's share of this estimate would be in the neighborhood of $20,000,000 annually. The article states: "This is the sum that could be realized by the adoption—and the enforcement—of more effective sanitary provisions, and by the intelligent efforts of individual citizens acting in co-operation with the medical profession." As the author says: "It is a sum well worth saving, for every dollar of it represents not only economic waste, but also pain, suffering, and sorrow, all unnecessary."—California State Board of Health Bulletin.

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only, and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICIAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all com munications relating to advertising or other business, should be sent to the Business Manager 22 Columbia Road, Dorchester, Boston, Mass.

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Reports of Societies and Personal Items should be sent in by the 15th of the month previous to the one in which they are to appear. Reprints will be furnished at cost and should be ordered of the Business Manager before the article is published.

ADDITION TO EDITORIAL STAFF

It is with satisfaction that the present editors of the *Gazette* announce that they have been able to persuade Dr. DeWitt G. Wilcox to become associated with them in the editorial management of this journal. Probably no one of our American homœopathic fraternity is better known as a brilliant and witty speaker or deliberate thinker able to put his thoughts into striking phrases than is Dr. Wilcox. Coming from Buffalo after years of successful practice amid hosts of friends, he has rapidly made an enviable reputation and very numerous friends in Boston, the home of more recent adoption. The doctor will devote his attention particularly to the editorial department of the *Gazette* and will also contribute to the general success of the magazine by his advice and coöperation. We believe that our readers are to be congratulated upon this addition and are positive that we shall as a result be better able to produce a journal more nearly approaching our ideal than has been possible heretofore.

THE NOISELESS CITY.

The summer girl complained that first it was a horseless carriage, then an oarless boat, and soon it would be an armless courtship, and then it would be a tasteless life. Just now it is a noiseless zone for school houses. The "Society for the Suppression of Unnecessary Noise" is carrying on an active campaign in the establishment of "quiet zones" within a certain area of all school buildings.

It almost seems as if there had been established a society for the suppression of everything that could be suppressed, except life, liberty and the pursuit of happiness, and even these latter the food trusts seem determined to suppress, so much so that we now need a society for the "Suppression of the Suppressors." Just as we had torpedo boats for destroying the bat-

tle ships, then came torpedo boat destroyers for destroying the torpedo boats, then torpedo boat destroying destroyers for destroying the torpedo boat destroyers, and later we may have a ——, well, never mind, we haven't room to say it. At any rate we commend the "Society for the Suppression of Unnecessary Noise."

We only beg of it not to make noiseless sleeping cars, for when one considers the sonorous waves which rise triumphant above the rattle and roar of the 60-mile an hour Pullman, one can imagine what those sound waves would be if it were a noiseless sleeper. It is the philosophy of the dog and the fleas; we must have some little troubles to make us forget the bigger ones.

It does not require the judgment of an expert neurologist to make one believe that the noises produced near the average city school building situated in a populous district are sufficient to become important factors in producing nerve irritations of various kinds. The mere strain on the part of young children in endeavoring to hear what is said by the teachers when the ear is distracted by a multiplicity of deafening noises, spells nerve exhaustion. The further strain on the young child, or older one either, for that matter, in trying to make himself heard above the din of outside noises is apparent long after he reaches the quiet of his own home. We can not do too much to guard young children against nerve strain, which means nerve leak, and later nerve exhaustion. "The Forum" for December contains a very instructive editorial upon this subject. The Editor says:

"Starting with the question of pavements, two reports were made, the first by our Society and the second by the Department of Education, which further aided our efforts by a recommendation of its Board of Superintendents that representations be made to the municipal authorities to order 'repairs to the noiseless surfacing' where needed, or to 'have the present covering replaced by asphalt or other noiseless pavement.' Appeals were then made to the Borough Presidents on this subject, but, unfortunately, limited appropriations rendered slow and difficult the relief so urgently needed.

"The next step was to ascertain whether the sentiment among teachers and principals was strongly in favor of having Quiet Zones drawn around their schools, provided that the Board of Aldermen would be willing to establish them by ordinance. Letters were accordingly sent to the principals of all the schools in the five Boroughs, representing about fourteen thousand teachers, asking them for an expression of their opinion on this subject. To these the response was overwhelming. Not only were replies received from the principals, but in many schools the teachers, too, added their appeals, and—in some cases—even the children wrote to me, deploring the conditions under which they were compelled to work. From all of these I shall quote freely, because they express so touchingly the distress endured and also the hope that relief might be vouchsafed them.

"Both teachers and pupils suffer grievously from noises that interrupt their work and distract their minds. . . . . The teachers suffer and the children suffer in consequence."

"Few outside of the schools," wrote another, "realize the dreadful nerve-strain caused by teaching in a room facing on a noisy street. The nervous tension under which we labor is materially increased by the numerous unnecessary noises which hinder us so seriously in our work. Sometimes these have been so great that we have been compelled to resort to the expedient of writing our directions on the blackboards. It does not seem unreasonable to request that some effort be made to reduce nerve-racking, hideous noises which deafen and distract both teachers and pupils."

"To say that we are in hearty sympathy with your movement would be altogether inadequate. We beg you to help us. We teach from nine to three where there is a constant roar of traffic—the din is terrific, nerve-racking and nerve-wrecking."

Many of these letters refer to the effect of continued loud talking on the throat, necessitating medical treatment:

"Of course, the teachers' welfare is not generally considered, but the effort that we must make to speak 'above the noise,' strains the voice and taxes and injures the sense of hearing. I am most of the time under a physician's care, the condition of my ears being due to ear-strain alone."

In a certain school it was reported that four teachers were spending most of their salary for throat and ear treatment, while vocal paralysis was complained of in another. Another feature prominently brought out in the letters was the loss of time:

"It is no exaggeration to say that the noise robs class and teachers of 25 per cent. of their time. The work of both pupils and teachers would be increased in efficiency and made easy by anything that would tend to reduce the din."

While we heartily endorse the efforts of this society for seeking to establish a quiet zone around all school houses, we would go further and begin a campaign for the suppressing of all unnecessary street noises. The day of the old stone block pavement has gone or should be gone with the horse-driven truck, and with it the rattle of the iron tires on the stone blocks. Mufflers for gasoline vehicles are so perfected that practically no noise should come from that source, yet the motor trucks seem peculiarly exempt from such restrictions.

Next, all street hucksters should be muffled even more closely than automobiles, as there is not the slightest excuse for their vociferous jargon, which no one understands. The clanging of signal bells on street cars in ringing up fares and signalling to motormen is unnecessary and closely akin to the diabolical. A red light signal could be made to do all that the bell does and do it with blessed silence.

Then there are those two-wheeled carts which collect the garbage wherein there is about one inch of "play" between the

flange of the axle and the side of the hub, thus allowing the wheel to jam back and forth on the axle with a noise that makes a civilized man want to turn savage and scalp some one. All of this is entirely avoidable by placing a few leather washers on the axle. Accompanying that same dump cart is the bump, bump, bump, heard for half a mile when the horse trots and the cart is empty, all due to a failure to fasten down the loose box tight to the cross bar.

No, we do not advocate the suppressing of the shouts of happy children. Let 'em yell! It's good for *their* nerves, however it may affect their elders, and this is the children's age. When people get into that state wherein they cannot endure the noise of happy children, it is a sign they need a vacation, or have lived too long. At any rate, it is better to remove them than the children.

As physicians, we are interested in whatever lessens the sum total of physical suffering, hence we are interested in everything which protects the school child from unnecessary nerve wear. Distracting noises near the school room are a factor in nerve waste and should be abolished.

THE LIVES OF GREAT MEN.

The recent death in England of Hughlings Jackson marks the demise of a man to whom medicine is deeply indebted. The mention of the term "Jacksonian Epilepsy" tells something of the work of this great man. He might well be called the father of neurology amongst English-speaking nations, for at the time he began his work, forty years ago, the little which was known of diseases of the nervous system was in a very chaotic state.

The medical student of today who does not know something of brain localization and the general function of the cerebrum and cerebellum has not progressed very far in his studies, and yet so recently as the beginning of this man's professional career nothing definite was known concerning the sphere of action of any part of the brain, and brain localization was an unexplored country.

In 1877 he established the fact that "the cerebellum is the centre of continuous movements, and the cerebrum of changing movements." That was the great starting point which gave him his insight into such diseases as tabes, hemiplegia, and, later, epilepsy. It can truly be stated that our first definite knowledge of epilepsy dates from Jackson's researches.

To the student who wishes to be something more in his profession than an imitator and the follower in grooves worn by his predecessors, the life and work of Hughlings Jackson becomes an inspiration. He was possessed of indomitable courage and perseverance, two absolutely essential qualities for success in research work. He was a painstaking, attentive student, and was wont to say that his mental stimulus came from the lectures of

that rare surgeon, Sir James Paget, who was then in the glory of his teaching days. He served continuously for forty-four years in the National Hospital for the Paralyzed and Epileptic, London, where he studied every patient under his care with a persistent and determined effort to find the pathology of each case. Every patient was to him not only a human being whom he was endeavoring to relieve, but also a disease, the nature and cause of which he felt in duty bound to discover.

As is frequently the case with men who have rendered valuable service to medicine, he was not known as a great man outside of the profession and the circle of patients wherein he worked. It is comparatively easy to follow the blazed trail, even though it may lead through jungle and dark forests, but it requires a Livingston and a Jackson to hew a path and blaze a trail where no footsteps have preceded them.

MEDICAL RETROGRESSION.

To any fair-minded person the recent issue of "Medical Freedom" must appear as a general tirade against everything medical, including public health, hygiene, and sanitation. It reminds one of the fiery anarchist who cried, "I don't know what your government is, but I'm agin it." It is simply "agin" things medical.

It does not require a magnifying glass to catch a glimpse of the colored gentleman who inhabits the wood pile when one reads the attack on Dr. Wiley for his expressed wish in having his department exercise control over proprietary medicines. Why should that wish be so particularly offensive to "Medical Freedom?" We wonder why! In another article it criticises the reporting of infectious diseases; another attacks inspection of public school children, and on compulsory vaccination it simply runs rampant.

In large type it quotes Huxley as saying, "I think it is much more wholesome for the public to take care of itself." Must we reverse the wheels of progress and go back a few score years just to please "Medical Freedom"? How well the public could and did take care of itself, one need but review a few of the deadly epidemics which prevailed in the days before the public was compelled by law to take proper care of itself, and what is there to prevent our having a revisiting of those same deadly epidemics if such sentiments as "Medical Freedom" puts forth should prevail?

It is with sincere regret we see the names of some of our homœopathic physicians mentioned in this sheet as advocates of the League for Medical Freedom, particularly one prominent physician who seems to be giving all his time in travelling up and down the country organizing Leagues, which have for their real object the restriction of medical progress. We as a school can fight our battles without any aid from the patent medicine fakirs and "new cult cureists."

MASSACHUSETTS SURGICAL AND GYNÆCOLOGICAL SOCIETY.

The seventy-seventh session of the Society was held in Chipman Hall, Tremont Temple, on the afternoon of Wednesday, December 13. The regular session. was preceded by a surgical clinic in the Massachusetts Homœopathic Hospital in which Drs. Packard, J. E. Briggs, Winfield Smith, Chandler, C. T. Howard, W. F. Wesselhoeft and Southwick participated. Five new members were elected as follows: Martha Boyd Bates, Providence, R. I.; Harry F. Cleverly, Scituate; Byzant J. Manoogian, Boston; Howard A. Nowell, Boston; Conrad Wesselhoeft, Boston. The scientific session consisted of the report of the Bureau of Gynæcology, Dr. Arthur H. Ring, Chairman.

The afternoon was devoted to a symposium on Vaccine Therapy, the program being as follows:

1. Vaccines in General Practice. Dr. Frederick P. Batchelder.
2. Vaccines in Surgery. Dr. George R. Southwick.
3. Present Status of Vaccines.
   a. Boston University School of Medicine. Dr. W. H. Watters.
   b. Private Laboratory, Portland, Maine. Dr. Charles A. Eaton.
   c. Massachusetts General Hospital. Dr. Albert E. Steele.
   d. Tufts Medical School. Dr. Timothy Leary.

Dr. George Sanborn of the Boston City Hospital was unavoidably detained from the meeting. The majority of the papers will appear later in the pages of the *Gazette*. The meeting adjourned to Young's Hotel, where the annual dinner was held. Following this came post-prandial exercises, with Dr. Nelson M. Wood as chairman. Mr. Stanton H. King, of the Charletown Sailors' Haven, and the Rev. Everett C. Herrick of Charlestown both gave excellent addresses. The meeting was attended by the largest number in the history of the Society and was a very enthusiastic one. The new officers elected are as follows:

For President. Arthur H. Ring, M.D.
For Vice-Presidents, Herbert D. Boyd, M.D.
Jane S. Devereaux, M.D.
For General Secretary, Harry J. Lee, M.D.
For Treasurer, Isabel G. Weston, M.D.
For Auditor, Herbert C. Clapp, M.D.
For Censors, Amanda C. Bray, M.D.
Thomas E. Chandler, M.D.
Mary A. Lakeman, M.D.

MEETING OF THE TRUSTEES OF THE AMERICAN INSTITUTE OF HOMŒOPATHY.

The annual meeting of the trustees of the American Institute of Homœopathy was held in Pittsburgh on December 2. There were present twelve out of the fifteen members. These were Drs. J. H. McClelland, E. L. Mann, T. H. Carmichael, George Royal, W. H. Dieffenbach, W. O. Forbes, G. J. Jones, Franklin T. Smith, J. Richey Horner, Clara E. Gary, J. P. Cobb and John P. Sutherland.

A large amount of routine business was performed and many plans were considered for the coming meeting of the Institute in Pittsburg in 1912. It seems probable that this meeting will be held during the week of June 16-23, although as yet no official action has been taken. A great effort is expected to be made in the campaign for new members, and much is anticipated from this.

OBITUARY.

Dr. Asa D. Smith.

Dr. Asa D. Smith was a member of the Massachusetts Homœopathic Medical Society and was well known to a large number of the older practitioners in and about Boston. His sudden and somewhat unexpected death has brought many expressions of appreciation and sympathy from a large number of friends. The Boston Globe of November 26 contained a very appreciative notice of his work, which we quote:—

"Dr. Asa D. Smith died suddenly yesterday morning while sitting in a chair in his home at 1623 Dorchester Avenue. He had been ill from heart trouble for about six weeks. He was one of the best-known physicians in Dorchester.

Dr. Smith was born in Needham, November 17, 1835. He was graduated from the Needham Grammar School and the French Academy at Waltham. Then the Civil War broke out and he enlisted in the 16th Massachusetts Regiment, May 7, 1861. The regiment went into camp at Watertown in preparation for its movement to the front.

He was in the battle of Glendale, before Richmond, June 30, 1862. He was wounded there, a fragment of a shell striking him in the face and seriously injuring his lower jaw. He recovered from his wound and later took part in the battle of Fair Oaks, Malvern Hill, Seven Pines and others. He was discharged from the Army as a corporal of Co. K, 16th Massachusetts Regiment, and came back to his home in Needham.

For a while he engaged in the shoe business, and later was appointed a member of the old State Constabulary, which was the forerunner of the present State detective force. He moved to Boston in 1870. He entered Boston University Medical School in 1875 and was graduated in 1878. While studying in the University he was for a time an employe at the Boston Custom House as an inspector, retaining his position until 1877.

After graduation he took up practice in South Boston. He was widely known there and his practice was large. In 1901 he moved to Dorchester, where he has since been in active work as a physician.

Dr. Smith was a member of Dahlgren Post 2, G. A. R., of South Boston. He was also a member of the Boston Homœopathic Medical Society. He was a trustee of the Dahlgren Memorial fund and a member of the Hooker Association and of the 16th Massachusetts Regiment Association.

On January 20, 1866, he married Miss Abbie L. Newhall of Needham, who survives him. There were six children, five of whom survive him. They are Asa N., George Homer, Annie Louise, William Wallace and Effie N. Smith."

O. A. Bemis, M. D.

Dr. Oscar Adelbert Bemis was born in Plainfield, Vermont, in 1846, and died in Whitman, Mass., November 21, 1911. Dr. Bemis was a self-made man. His early years were spent in Vermont. His education was acquired in the public schools of his native state, his medical education in Hahnemann Medical College of Philadelphia. For several years he practiced medicine in Vermont, and in 1891 he removed to Whitman, where he spent the remainder of his life and where he had a wide circle of patients and friends. He always took a deep interest in town affairs, for many years had been a member of the Board of Health, and at the time of his death was its Secretary. He had been one of two school physicians ever since the system of school inspection had been adopted by the town. He was much interested in a system of sewerage and was working on a plan at the time of his death. He was an associate member of the G. A. R. Post, was a charter member of the Board of Trade, was one of the founders of the Hetherly Medical Club, and for two years was its president. In religion he was a Unitarian, and a constant attendant at church service. But the crowning glory of Dr. Bemis every day life was his belief in Homœopathy and this belief he exemplified in his every day practice. He had no use for the combination tablet or other lazy methods of practice. Being a diligent

student of Hahnemann he applied the wisdom gained thereby in his practice, and as a result he had a large clientele in his own and adjoining towns. Dr. Bemis leaves a widow, the wife of his youth, and four sons. Thus has passed on a kind and indulgent husband and parent, a sturdy New England townsman, an honored physician, a consistent homœopath. Many mourn his taking away, for men of his stamp are few.

N. R. Perkins.

Walter Wyman, M.D., Surgeon General of the Public Health and Marine Hospital Service, died on November 20, from a carbuncle. Dr. Wyman's life had been an unusually public one, and of great activity in his chosen department. He had been for many years connected with the Marine Hospital Service, and was appointed Surgeon General in 1902.

Henry P. Perkins, M.D., died suddenly at his home in West Newton on November 26. Dr. Perkins was born in 1864. He received the degree of M.D. at Harvard Medical School in 1881. After graduating he settled in Newton, where he had been practising since. He had long been connected with the Newton Hospital, and in 1896 became its senior surgeon. He was a member of the Massachusetts Homœopathic Medical Society, and had always been active in his professional life. His loss will be widely felt.

Dr. Almon W. Hill, of Concord, New Hampshire, died at the Massachusetts Homœopathic Hospital on September 17, last, at the age of forty-seven. Dr. Hill was a graduate of the class of '87, Boston University School of Medicine.

Dr. Virginia F. Bryant, of the class of 1884, B. U. S. M., died on January 4, at her home in Nahant, Mass., at the age of fifty-six.

BOOK REVIEWS.

The Physician's Visiting List for 1912. P. Blakiston's Son & Co., Philadelphia, Pa. Sixty-first of its publication.

One of the most welcome little books of this nature comes to us each year from this firm. It is very neatly bound in black leather. It consists of a visiting list for twenty-five patients per week throughout the entire year. It also contains a number of important facts such as dose-table, table of incompatibles, etc. The price, $1.25, is certainly reasonable as the paper is excellent and well adapted for writing with pen, and the entire volume neat and attractive.

Some time ago there was reviewed in these columns a book upon Ophthalmic Therapeutics by Davis. It was one of a series upon ophthalmic practice which is being prepared by this publishing house under the editorial supervision of Dr. Walter L. Pyle. The one now under consideration is another of the same series. The topics of which it treats, pathology and bacteriology, will doubtless be less popular than were those of the others, as treatment is a necessity for all, while a smaller number consider the more theoretical considerations.

Both authors are Englishmen who have had extensive experience in the subjects both from the operative and from the laboratory side. It is from this wide experience that the book has been written rather than from that of the theorist. If any one part might be selected as more valuable than another it is the chapter upon parasitic diseases of the eye (bacteriology) with a final section upon practical methods.

Manual of Pathology including Bacteriology, the technic of Postmortems, and methods of Pathologic Research by W. M. Late Coplin, M.D., Professor of Pathology, Jefferson Medical College, Philadelphia; Medical Director of the Jefferson Medical College

Hospital; Pathologist to Jefferson Medical College Hospital and to the Philadelphia (Blockley) Hospital; Director of the Clinical Laboratories of the Jefferson Medical College Hospital; Pathologist to the Friends' Asylum for the Insane, Frankford. Fifth edition, rewritten and enlarged. With six hundred and twelve illustrations and twelve plates, eleven of which are in colors. Philadelphia. P. Blakiston's Son & Co. 1911.

This book in its previous editions has already been reviewed in the *Gazette.* Since the book appeared in 1894 it has won for itself a decided degree of popularity. While probably not the most popular of any work written upon this subject, it is very widely used both as a text for the medical student and as a work of reference for the practitioner. The reviewer is much more pleased with this latest edition than he has been with some of the preceding.

At present we note with much satisfaction the addition of a chapter upon the pathology of the diseases of the reproductive organs, a subject that has heretofore caused an unfortunate gap in the continuity of the book.

A very large number of illustrations are found in every part. Several of these are in colors, which as a whole very well reproduce the normal appearance of the tissues illustrated.

A final chapter has been added upon Postmortem Examinations and general Histologic Methods, which is a distinct improvement over the ones in the preceding editions.

We are glad to give to this book a much more commendatory notice than in previous reviews.

Lectures on Homœopathic Materia Medica. By James Tyler Kent, A.M., M.D., Professor of Materia Medica in Hering Medical College, Chicago; Author of "Repertory of the Homœopathic Materia Medica," and "Lectures on Homœopathic Philosophy." Second edition. Philadelphia; Boericke & Tafel. 1911.

Dr. Kent is probably now the most prominent living exponent of so-called "strict Homœopathy." His name and his fame is literally world-wide. A large part of this popularity dates from his Post-graduate School of Homœopathics at which the author delivered a series of excellent lectures. These lectures were given in a sort of conversational manner, and their didactic value proved to be great. At the request of many auditors they were amplified and put into book form in 1904. During the past seven years many alterations have been made, so that the present volume is much larger than the former. In general arrangement it suggests Hughes' Pharmacodynamics rather than the more formal materia medicas which are so often merely symptom lists.

The colloquial form is maintained, much to the advantage of the reader as well as to his interest. The usual alphabetical order of drugs is followed rather than any attempted natural classification. All those who have tested the first edition and many others who have not will study this new volume with much pleasure.

What to Eat and Why. By G. Carroll Smith, M.D., Boston, Mass. Philadelphia and London. W. B. Saunders Company. 1911.

A practical book upon a practical subject is always welcome in medicine. And certainly there is no more practical topic than that of dietetics, coming at is does into intimate relation with every individual.

The author of this book apparently holds no school or hospital appointment but has obtained his experience from private practice. He has, however, as personally known to the reviewer, devoted a great amount of time and attention to the subject and has undoubtedly had wide experience in the matters under consideration.

The introductory chapter is very interesting and serves well as a means of increasing the interest of the reader in what follows. It is unfortunate that fifteen pages of the text have been duplicated and interpolated by mistake in another place. In some instances grammatical phrases might be improved. Very easily neutralizing these things are the numerous advantages of the work. Following this introduction comes dietetic consideration of

various diseases such as obesity, emaciation, pulmonary diseases, alimentary diseases, etc., with incorporation of many diet tables and rules. A very commendable feature is the addition of marginal synoptic notes.

The book taken as a whole strongly appeals to the writer, who has been much interested in its perusal and who has learned much therefrom. It is certainly deserving of extended popularity.

Case Histories in Neurology. A selection of histories setting forth the Diagnosis, Treatment and Post Mortem Findings in Nervous Diseases by E. W. Taylor, M.D., Instructor in Neurology, Harvard Medical School; Assistant Physician, Department Neurology, Massachusetts General Hospital; Visiting Neurologist, Long Island Hospital, Boston. Published by W. H. Leonard, Boston, 1911.

It is seldom that one finds in medical literature such interesting and profitable reading as Dr. Taylor has produced in compass of the three hundred pages of this delightful book. It is a masterpiece of its kind, and a fit companion for the others of its series by the same publisher. The cases are classified under the headings of 1.—Peripheral Nerves; 2.—Spinal Cord; 3.—Brain; 4.—Conditions of Vague or Undetermined Pathological Basis; 5.—Psycho-Neurosis. Under each of these headings has been collected such a series of diversified yet typical clinical pictures, that as one reads he is continually distracted by the resemblance to some similar case in his own experience. Indeed one of the most useful things about such clinical teaching is the number of associations which it arouses in the reader's mind.

Dr. Taylor, as a result of his large experience, is unusually qualified to sift the wheat from the chaff, and has encompassed within a relatively small volume a remarkable collection of valuable diagnostic pictures set in familiar frames and unencumbered by distracting unessentials. While this has great advantage, we must not lose sight of the fact that a patient as seen in the office usually presents a series of distracting and unessential symptoms, which only much practice and experience can properly sift. This Dr. Taylor helps us to do.

Each section is introduced by a brief resume of essential anatomical and diagnostic facts. The body of the book deals essentially with organic diseases and autopsies, which round out the cases in the most satisfying manner. Many new and graphic diagrams are included which greatly clarify the text. Dr. Taylor has not neglected the field of Psychoneurosis and says of it, "There can be no doubt that a candid acknowledgement of the psychogenesis of the so-called functional disease goes far to clarify the understanding of these hitherto obscure and elusive affections." The treatment according to the old school methods has not been neglected, though the homœopath will add much to it from his broader and more inclusive therapeutic array.

This book is one which may be picked up after a hard day's work with enjoyment and profit, and we can heartily recommend it to our readers.

Further Researches Into Induced Cell-Reproduction and Cancer consisting of papers by H. C. Ross, M.R.C.S. England, L.R.C.P. London; J. W. Cropper, M.B., M.Sc. Liverpool, and E. H. Ross, M. R.C.S. England, L.R.C.P. London. With illustrations. The McFadden Researches. P. Blakiston's Son & Co. Philadelphia. 1911.

A few months ago a criticism was made in the columns of the *Gazette* concerning an earlier book of "Induced Cell-Reproduction and Cancer" by this same author. The opinion of the reviewer at that time was decidedly favorable to the book although he felt that a wise conservatism was necessary before accepting as facts all statements therein contained. The great amount of work performed by the author was, however, very commendatory. After the review was written attention was directed to an apparent effort by certain individuals in England to cast discredit upon the entire subject, and apparently intended it to indicate Sir Roland Ross, a brother of the author, who was by no means favorably inclined toward the new topic. Sir Roland has later published an open letter not only

denying this, but apparently demonstrating the jealousy or odium of certain individuals toward the author.

The present book, much smaller than the former, contains about seventy pages, detailing further investigations along the same line as the first one. For some months the reviewer has been planning to give to the topic experimental trial and has read with much interest the further accounts of the work appearing in the present book.

The C. V. Mosby Company, of St. Louis, has announced the publication of a book on Pellagra, to be ready by January 1, 1912. This book is being prepared by Dr. Stewart R. Roberts, of Atlanta, Ga., who has just returned from Italy, where he studied the disease in its natural habitat. While in Europe Dr. Roberts made extensive research regarding the etiology and treatment of Pellagra, and the data contained in the book will reflect the latest and best work that has been done in connection with this disease, making it a reliable guide to those seeking information on the subject.

The New York Medical Journal announces that it has succeeded in making arrangements with Dr. Charles E. de M. Shagrus of Philadelphia, whereby he has agreed to accept the position of supervising editor of that Journal. Dr. Shagrus is very well known throughout the country both by his teaching, and by his writing. Probably the best known of his works are the two volumes on Internal Secretions, and the Principles of Medicine, a review of which appeared in the pages of the *Gazette* several years ago. He is also the editor of the Cyclopedia of Practical Medicine. We sincerely congratulate the New York Medical Journal upon this very notable acquisition to its staff.

MONTH'S BEST BOOKS.

Operative Surgery. Binnie. $7.00. P. Blakiston's Son & Co.
Ophthalmology. Fuchs. $6.00. J. B. Lippincott Co.
Pain. Schmidt. $3.00. J B. Lippincott Co.
Diseases of the Digestive Canal. Cohnheim. $4.00. J. B. Lippincott Co.
Diseases of Infancy and Childhood. Fischer. $6.50. F. A. Davis Co.

THE YEAR'S BOOKS.

ANATOMY AND PHYSIOLOGY.

Essentials of Anatomy. Nancrede. 8th Ed. $1.00. W. B. Saunders Co.

Anatomy of the Brain and Spinal Cord. Whitaker. 4th Ed. $2.00. Chicago Medical Book Co.

Handbook of Physiology. Halleburton. 10th Ed. $3.00. P. Blakiston's Son & Co.

Textbook of Physiology. Howell. $4.00. W. B. Saunders Co.

Manual of Physiology. Lyle.

Mechanism of the Heart Beat. Lewis. $6.50. Chicago Medical Book Co.

CHEMISTRY.

Volumetric Analysis. Sutton. 10th Ed., $5.50. P. Blakiston's Son & Co.

Medical Chemistry and Toxicology. Holland. 3rd Ed. $3.00. W. B. Saunders Co.

Practical and Analytical Chemistry. Martin. 5th Ed. $1.50. P. Blakiston's Son & Co.

Quantitative Chemical Analysis. Tower. 2nd Ed. $1.00. P. Blakiston's Son & Co.

PATHOLOGY.

Manual of Pathology. Coplin. 5th Ed. $4.50. P. Blakiston's Son & Co.

Manual of Pathology and Morbid Anatomy. Green. 11th Ed. $4.50. Lea & Febiger.

Manual of Pathology. McConnell. $2,50. W. B. Saunders Co. Very popular with students.

Pathological Tecanic. Mallory & Wright. $3.00. W. B. Saunders Co. An invaluable laboratory aid. There is no other book that can replace it.

Microbiology. Marshall. $2.50. P. Blakiston's Son & Co. Just out. Medical, agricultural and economical. Excellent.

Veterinary Bacteriology. Buchanan. $3.00. W. B. Saunders Co.

Spirochætes. Bosanquet. $2.50. W. B. Saunders Co.

Laboratory Diagnosis. Faught. 3rd Ed. $2.00. F. A. Davis Co.

Clinical Chemistry and Microscope. Wood. $5.00. D. Appleton & Co.

Cardiac Pathology. Norris. $5.00. W. B. Saunders & Co.

HYGIENE.

Practical Hygiene. Harrington. 4th Ed. $4.50. Lea & Febiger. The best book known to us on this subject.

Hygiene and Public Health. Parkes & Kenwood. 4th Ed. $3.50. P. Blakiston's Son & Co.

Medical Inspection of Schools and Scholars. Kelynack. $4.20. Chicago Medical Book Co.

What to Eat and Why. Smith. $2.50. W. B. Saunders Co. This Boston author has prepared a book that is having a large sale, and justly so.

DIAGNOSIS.

Treatise on Diagnostic Methods of Examination. Sahli. 2nd Ed. $6.50. W. B. Saunders Co. Very widely quoted, well prepared and clearly written.

Differential Diagnosis. Cabot. $5.50. W. B. Saunders Co. Cabot's "Diagnosis" had four printings in eight months. It's popularity has been almost phenomenal.

Medical Diagnosis. Anders & Boston. $6.00. W. B. Saunders Co.

Clinical Diagnosis. Simon. 7th Ed. $5.00. Lea & Febiger. An old and tried friend in a new, perfectly up-to-date dress. As respected as ever.

Physical Diagnosis. O'Reilly. $2.00.

Diagnostic and Therapeutic Technic. Morrow. $5.00 W. B. Saunders Co.

MEDICINE.

Practice of Medicine. Hughes. 10th Ed. $2.50. P. Blakiston's Son & Co. Tested and found worthy after years of trial in the actual brunt of practice.

Textbook of Medicine. Strumpell. Two volumes. $12.00. D. Appleton & Co. Highly reported by others. We have not seen it.

Practice of Medicine. Anders. 10th Ed. $7.00. W. B. Saunders Co.

Manual of Practice of Medicine. Stevens. 9th Ed. $2.50. W. B. Saunders Co. Probably well-known to most of our readers. The new edition is equally as satisfactory as the earlier ones.

Practice of Medicine. Gatchell. Boericke & Tafel.

Tropical Medicine. Daniels. 3rd Ed. $4.00. P. Blakiston's Son & Co.

Diseases of the Lungs and Pleuræ. Powell & Hartley. 5th Ed. $6.00. P. Blakiston's Son & Co.

Auto Inoculation in Pulmonary Tuberculosis. Paterson. $8.00. Chicago Medical Book Co.

Prevention of Infectious Diseases. Doty. $2.50. D. Appleton & Co.

Clinical Symptomatology. Pick & Hecht. $6.00. D. Appleton & Co.

Diseases of the Stomach. Aaron. $4.75.

Manual of Fevers. Buchanan. $2.50. Oxford University Press.

Fevers in the Tropics. Rogers. $7.50. Oxford University Press.

TREATMENT.

Practical Treatment. Musser & Kelly. Vol. 1 & 2. $6.00 per vol. W. B. Saunders Co. The names of these authors is sufficient warrant of the worth of the series.

Ehrlich-Hata. No. 606. Wechselman. Rebman Co. Wechselman has done more work with Ehrlich than any other clinician. His published opinion is therefore of the greatest value.

Treatment of Syphilis by the Ehrlich-Hata Remedy. Bresler. $1.00. Rebman Co. This has proven to be an excellent "seller."

Experimental Chemice Therapy of the Spirillæ. Ehrlich. $4.00. Rebman Co.

Modern Treatment of Alcoholism and Drug Narcotism. McBride. $2.00. Rebman Co.

Cholera and its Treatment. Rogers. $4.00. Oxford University Press.

Modern Treatment and Medical Formulary. Campbell. $2.50. F. A. Davis Co.

MATERIA MEDICA.

Plain Talks on Materia Medica. Pierce. Boericke & Tafel. This is proving to fill a want felt by many homœopaths, and the reports of its reception are very flattering.

Lectures on Materia Medica. Kent. 2nd Ed. Boericke & Tafel. Written by the leading exponent of high potency homœopathy, and the book will be particularly prized by followers of that method of practice.

Manual of Materia Medica. Thornton. $3.50. Lea & Febiger.

Modern Dental Materia Medica, Pharmacology & Therapeutics. Buckley. 3rd Ed. $2.50. P. Blakiston's Son & Co.

Materia Medica for Nurses. Groff. 6th Ed. $1.25. P. Blakiston's Son & Co.

DERMATOLOGY.

Diseases of the Skin. Sequira. $8.00. P. Blakiston's Son & Co. The plates in this work are deserving of special commendation.

Principles and Practice of Dermatology. Pusey. $6.00. D. Appleton & Co. An excellent, complete and authoritative treatise upon diseases of the skin.

DISEASES OF THE EYE, EAR, NOSE AND THROAT.

Diseases of the Ear, Nose and Throat. Phillips. $6.00. F. A. Davis Co.

Diseases of the Eye, Ear, Nose and Throat. Kyle. 3rd Ed. $3.00. P. Blakiston's Son & Co. Reports announce an extensive sale and wide popularity.

Manual of Diseases of the Eye, Ear, Nose and Throat. Reike. $3.00. D. Appleton & Co.

Modern Otology. Barnhill & Wales. 2nd Ed. $5.50. W. B. Saunders Co.

Handbook of Treatment of Diseases of the Eye. Adam. $2.50. Rebman Co.

Pathology and Bacteriology of the Eye. Collins & Mayou. $4.00. P. Blakiston's Son & Co.

Refraction and Visual Acuity. Scott. $1.75. Rebman Co.

Refraction of the Eye. Hartridge. 15th Ed. $1.50. P. Blakiston's Son & Co.

Muscular Anomalies of the Eye. Hansel & Riber. 2nd Ed. P. Blakiston's Son & Co.

Diseases of the Nose, Throat, and Ear. Ballinger. 3rd Ed. $5.50. Lea & Febiger. Probably one of the best books published on the subject is the opinion expressed by several of our specialists.

PEDIATRICS.

Care and Feeding of Children. Holt. 5th Ed. $5.00. D. Appleton & Co. This is without doubt the most widely circulated book upon pediatrics in English, over eighty thousand copies having been reported sold.

Diseases of Infancy and Childhood. Fischer. 4th Ed. $6.00. F. A. Davis Co.

Diseases of Infants and Children. Ruhrah. $2.50. W. B. Saunders Co.
Case Histories in Pediatrics. Morse. W. M. Leonard. Excellent, instructive and interesting.

SURGERY.

Surgical Diagnosis. Johnson. 3 vol. $6.000 per vol. D. Appleton & Co.
Surgical Anatomy. Campbell. 2nd Ed. $5.00. W. B. Saunders Co.
Operative Surgery. Binnie. 5th Ed. $7.00. P. Blakiston's Son & Co. This has proven very widely popular.
Manual of Surgery. Stewart. 2nd Ed. $4.00. P. Blakiston's Son & Co. This book continues to "make good" in its new dress.
Minor Surgery. Bedwell. $2.00. Oxford University Press.
Minor and Emergency Surgery. Dannreuther. $1.25. W. B. Saunders Co.
Principles and Practice of Bandaging. Davis. 3rd Ed. $1.00. P. Blakiston's Son & Co.
Plastic and Cosmetic Surgery. Kolle. $5.00. D. Appleton & Co.
Ionic Surgery in Cancer. Massey. $3.00. A. L. Chatterton.
Treatment of Fractures. Scudder. 7th Ed. $6.00. W. B. Saunders Co. Undoubtedly the most widely read book in America upon this subject.
Radiographic Atlas of Pathologic Conditions of Bones and Joints. Granger. $6.00. A. L. Chatterton. We believe this to be an excellent book but have not seen it.
Tuberculous Disease of Bones and Joints. Cheyne. $5.50. Oxford University Press. A treatise on a wide-spread class of cases written by a man of unusually wide experience and facility of expression.
Surgery of the Kidneys. Clarke. $4.00. Oxford University Press.
Practical Anæsthesia. Boyle. $1.50. Oxford University Press. Practical exposition of a seemingly simple subject but one only too often of vital importance.
Anæthesia and Analgesia. Mortimer. $2.00. Oxford University Press.
Enlargement of the Prostate. Moullin. 4th Ed. $1.75. P. Blakiston's Son & Co.
One Hundred Surgical Cases. Mumford. W. M. Leonard. We have already expressed our pleasure in reading these cases in a preceding number of the "Gazette."
Collected Papers of the Staff of St. Mary's Hospital 1905-1909. Mayo. $5.50. W. B. Saunders Co. Both this and the following book have received very wide popularity on account of the intrinsic value of the papers as well as from the well known personality of the author.
Collected Papers of the Staff of St. Mary's Hospital 1910. Mayo. $5.50. W. B. Saunders.

GYNÆCOLOGY.

Practical Gynæcology. Montgomery. 4th Ed. $6.00. P. Blakiston's Son & Co. Continues to enjoy a very enviable and justly deserved reputation.
Gynæcology. Gillian. 4th Ed. $5.00. F. A. Davis Co. The new edition promises to continue the popularity of the perceding ones.
Practical Gynæcology. Eden. $5.00. P. Blakiston's Son & Co.
Vaginal Celiotomy. Bandler. $5.00. W. B. Saunders Co.
Compend of Gynæcology. Wells. $1.00. P. Blakiston's Son & Co.

OBSTETRICS.

Operative Obstetrics. Davis. $5.50. W. B. Saunders Co. A volume that continues to be in the forefront in the obstetrical world in America.
Essentials of Obstetrics. Ashton. 7th Ed. $1.00. W. B. Saunders Co.
Reference Handbook of Obstetric Nursing. Wilson. 2nd Ed. $1.25. W. B. Saunders Co.

GENITO URINARY DISEASES.

Diseases of the Genito-Urinary Organs. Keyes. $6.00. D. Appleton & Co. Possibly less popular than some others because treating of

somewhat less enticing class of disease. In its field it is complete and will yield to all that information that is so frequently essential.

Practical Cystoscopy and Diagnosis of the Surgical Diseases of the Kidneys and Urinary Bladder. Pilcher. $5.50. W. B. Saunders Co. This subject seems to be becoming constantly more and more important.

NEUROLOGY.

Nervous and Mental Diseases. Church & Peterson. 7th Ed. $6.50. W. B. Saunders Co. This old and well established work keeps well up-to-date by frequent new editions. A friend of thousands of physicians.

Diagnosis of Nervous Diseases. Stewart. $4.50. E. B. Treat & Co. We believe this to be a good book, although we have not seen it.

Case Histories in Neurology. Taylor. W. M. Leonard. The review of this compilation in the present number of the "Gazette" well expresses our very favorable opinion obtained after careful study from cover to cover.

Regional Diagnosis in Affections of the Brain, and Spinal Cord. Bing. $2.50. Rebman Co. The publishers report a very large sale and most complimentary reports.

Meningitis Sinus Thrombosis and Abscess of Brain. Wyllie. $2.60. Chicago Medical Book Co.

The Blues—Splanchnic Neurasthia. Abrams. $1.50. E. B. Treat & Co.

MISCELLANEOUS.

Medical Dictionary. Dorland. 6th Ed. $4.50. W. B. Saunders Co. We can speak from personal experience of the usefulness of this book from day to day.

Pocket Medical Dictionary. Dorland. 7th Ed. $1.00. W. B. Saunders Co.

Medical Dictionary. Gould. 6th Ed. $1.00. P. Blakiston's Son & Co. This, on a smaller scale than the one above, has proven a faithful companion for a number of months.

Old Age Deferred. Lorand. 3rd Ed. $2.50. F. A. Davis Co.

Internal Secretions and the Principles of Modern Medicine. Sajous. 4th Ed. $6.00 F. A. Davis Co. In some respects an epoch making work. The result of laborious and prolonged study and investigation on the part of the author. It is probably more highly esteemed at present than it was when it first appeared.

Vicious Circles in Disease. Hurry. $2.00. P. Blakiston's Son & Co. A book that brings familiar topics to us in a new and novel light.

Medical Jurisprudence Toxicology. Reese. 8th Ed. $3.00. P. Blakiston's Son & Co. The year has seen a new edition of this justly popular work.

The Abdomen Proper. Morton. $12.00. Rebman Co.

International Medical Annual 1911. $3.50. E. B. Treat & Co. One of the most important books of the year to the practitioner who desires a summary of the most recent thought and investigation.

Textbook of Massage. Despard. $4.00. Oxford University Press. Among other things this will seemingly explain some of the "cures" of osteopathy.

Physical Training for Women. Galbraith. $2.00. W. B. Saunders Co.

State Board Questions and Answers. Goepp. 2nd Ed. $5.50. W. B. Saunders Co Many prospective candidates for examination for state registration in medicine will gladly vouch for the use of this work. However much we may deplore the modern examination methods, such methods persist and while they so continue this book or others will prove of great service.

Handbook of Cosmetics. Joseph. $1.00. E. B. Treat & Co. A subject hackyened from the standpoint of the layman and the charlatan, here treated from the standpoint of the physician.

Reduction of Domestic Mosquitoes. Ross. $1.75. P. Blakiston's Son & Co. The work of this author in connection with mosquitoes and malaria is too well known to need description. The topic is a vital one in many parts of our country.

Accidents in their Medico-Legal Aspects. Knocker. $8.50. Chicago Medical Book Co. This is a subject which all physicians sooner or later encounter and upon which they should be ever prepared.

Death—Its cause and phenomena. Carrington. $3.00. Chicago Medical Book Co. We all encounter this subject. It is well to study it.

What Shall I Eat? Gouraud. $1.50. Rebman Co.

The Mechanism of Life. Leduc. $2.00 Rebman Co.

Electricity in Medicine and Surgery. Potts. $4.75. Lea & Febiger. A topic of increasing importance, well treated.

Sensibility of the Alimentary Canal. Hertz. $1.0. Oxford University Press.

CORRESPONDENCE.

CHICAGO LETTER.

The Chicago Homœopathic Medical Society began its year's meetings with a banquet at the Sherman House, October 19. About one hundred were present.

The cordial greetings of the members as they came together for this first meeting seemed to indicate a growing acquaintance among them, which is always a good omen for the future growth and success of any organization.

Dr. A. H. Gordon, the president, gave a short report of the International meeting in London, which he attended, then introduced Dr. Royal S. Copeland, of New York, the guest, and speaker of the evening.

Dr. Copeland's address had a double topic,—The Present Status of Scientific Medicine, and, The Present Status of Homœopathy. He took as a text for the first part the assertion of the Flexner report that there is no longer any need of Homœopathy as a separate school of medicine, since all of proved value is incorporated into the scientific medicine of today. He reviewed the most recent works of the old school writers, and quoting from their treatment of such diseases as typhoid, pleurisy, scarlet fever, etc., not only disproved this assertion but showed that there had been but slight advancement, therapeutically, in the last half century. He fearlessly charged Potter with plagiarism in his Materia Medica. As an instance, he quoted from Potter's article on Pulsatilla, and asserted that whole sentences were copied verbatim from Hughes' Pharmacodynamics.

His second topic was treated more as an appeal for greater loyalty and a more aggressive policy on the part of homœopaths individuals and institutions. The necessity for maintaining the high standards of our medical schools, especially along laboratory lines, demands cash. The alumni of colleges should be willing to contribute toward this demand, and any loyal homœopathic physician living in the vicinity of a homœopathic college is just as responsible as its graduates, and should be just as willing to work and give for its support.

His arraignment of the factions in our school was fearless, and, to those of us who regret this unfortunate and unnecessary division, was none too severe. Dr. Copeland is a convincing speaker, but the driving force of his magnetic earnestness is conviction,—belief.

Hahnemann College has adopted a new method of raising an endowment fund. They call it "The Living Alumni Endowment Fund." Each alumnus gives the Alumni Association his note for whatever amount he chooses, on which he agrees to pay annually six per cent. interest. They propose to make this fund $100,000, which would yield the college $6,000 per year. The principal is not payable now, or at any

future time. The contract terminates at death, and may be cancelled at any time by giving six month's notice to the Secretary of the Alumni Association. This method is used by the New York Homœopathic Medical College and some Universities. It seems to be meeting with general approval. Undoubtedly, many would give annually the interest on an amount which they might not feel able to give in a flat sum.

RHODA PIKE BARSTOW.

Chicago, Ill., Nov. 28, 1911.

MONTREAL LETTER.

The year 1911 has been the most successful in the history of the Homœopathic Hospital of Montreal. More patients have been treated, and the popularity of the hospital is constantly increasing. The work of the Lady Supt., Miss Ida F. Bulmer, R.N., is deserving of special mention. She has worked faithfully for over four years and has displayed unusual executive ability. Much of the success of the hospital is due to her untiring efforts.

Dr. Arthur E. Robertson has decided to locate in Montreal after finishing his term as interne at the Homœopathic Hospital. His brother, Dr. James Robertson, has succeeded him at the hospital and is proving most obliging and careful in his work.

Dr. J. T. Novinger has returned from a visit to his old home in Missouri. The doctor is becoming a confirmed "convict." And by the way he holds the city championship as a golf player.

Dr. and Mrs. A. R. Griffith, who were in Europe for two months, are at home again.

The Mount Royal Sanatorium, owned and operated by Dr. Hugh M. Patton, has attained wide popularity in Montreal and vicinity. The buildings are situated in a commanding position on Dominion Square and are worth a fortune as a real estate holding.

Dr. E. N. Perrigard, one of our younger men, has purchased a new Ford, an evidence of advancing prosperity.

Dr. Laura Muller, who spent the summer in Europe, is working hard for the women and children of Montreal.

The venerable Dr. Arthur Fisher at 96 years of age continues to take a deep interest in Homœopathy. He reads his materia medicia every day and makes copious notes, an example for many of our younger men. Dr. Fisher has helped to develop history in Canada.

A COMMENT ON THE GAZETTE'S "FACTS REGARDING VACCINATION."

By F. M. Padelford, M.D., Fall River, Mass.

To those who have made a more exhaustive study of the cowpox vaccination question than the majority of physicians seem inclined to make, such articles as that published in the October number of the *Gazette* seem amusing, to say the least. They illustrate perfectly the fact that pro-vaccinators will accept any evidence, will believe anything, no matter how absurd it may be, if only it is favorable to vaccination.

According to Dr. Heiser's report, in the districts in which there had been "from time immemorial," an average annual mortality from smallpox of "at least 6,000 persons," the total population was approximately 1,000,000. Dr. Keen assures us that 6,000 deaths annually would "mean 25,000 to 30,000 cases each year." This estimate regarding the number of cases is probably a conservative one—assuming, of course, that the number of deaths has been as it is now claimed. In Cuba, according to the War Department Report of 1899, out of 1,185 cases of smallpox among natives, who were for the most part unvaccinated, there were but 119 deaths, a fatality-rate of 101.1 per cent.

Now how many non-immune persons is it probable that we should find in a population of one million, where, for centuries, the number of cases of

smallpox occurring each year had been fully equal to two-thirds of the total number of births in that territory?

In the April 14th report of the U. S. Public Health and Marine Hospital Service we are told that in one isolated district in which the population was about two thousand, smallpox was introduced, and before the facts became known to the outer world 1,000 persons contracted the disease. Vaccinators were sent there and an attempt was made to vaccinate those who had not yet manifested symptoms of the malady. They succeeded in vaccinating 800; "the remaining 200 * * fled from the vaccinators, and their condition is unknown." Here, you see, it is practically declared that with the exception of a few who are said to have been previously vaccinated, there were no immunes. It is not considered necessary, I think, to vaccinate people who have already had smallpox.

If now we assume that this is a truthful statement of the facts we must infer either that during the lifetime of the oldest inhabitant there had been in that district no case of smallpox, or that every case that had occurred during this period had been fatal. Both hypotheses are improbable. The truth undoubtedly is that the whole story concerning vaccination and smallpox in the Philippine Islands has not yet been told.

In England and in the United States serious illness and even death has, on numerous occasions, followed vaccination. Whether these disasters were actually due to vaccination or to infection of the vaccination wound is here immaterial; what concerns us now is the fact that it is authoritatively admitted that in England in each 14,159 primary vaccinations one death has occurred.

Notwithstanding that in England not every vaccinated person is as carefully guarded from infection during the three or four weeks immediately following the operation as he should be, we are confident enough that the precautions taken are fully as great as in the Philippine Islands among ignorant and uncleanly natives. Then is it possible, is it believable, that in these islands "in over 5,000,000 vaccinations * * not one single death has occurred"?

Alfred Russel Wallace, one of the world's ablest opponents of the cowpox practice, in a classical essay on this subject which every intelligent person should read, says:—"It is an absolute law of evidence, of statistics, and of common sense, that when two kinds of evidence contradict each other, that which can be proved to be even partially incorrect or untrustworthy must be rejected."

AN OPEN LETTER FROM DR. PALMER.

Impositions Upon Generosity.

Why is the doctor so often the last one paid? The provision dealer, the milliner, the tailor, the seamstress, church benevolences, are paid,—all bills except the doctor's bill. He must often wait months and years. But the laity demands the best from us. We must treat all patients with the utmost care, sometimes sacrificing needed rest, recreation, and even health. But that is nothing. That is our business, our blessed privilege, to devote our lives to humanity.

And our pay? *Pay?* What *can* a physician want of money? Curious that we need the money which has been due perhaps a year, perhaps longer. Other bills are paid, often cheerfully, but the money owing to the doctor comes hard,—frequently never.

Another phase of the subject, the impositions upon the physicians in the out-patient departments. These clinics are intended for the poor, people who cannot afford to pay a physician. To such, truly deserving, the profession gives heartily.

It seems to the writer that the clinics are filling more and more with men and women who can afford to pay a physician. Many of these people are earning a weekly income, and are sure of a certain amount each week. They buy almost anything they want on the installment plan, then come to an out-patient department for treatment, and pay only ten cents.

Only ten cents for the best treatment! Only ten cents, for three, five, ten or more dollars' worth of service! Only ten cents for services from the men and women who are devoting their lives to improve diagnosis and therapeutics!

Many of the clinic patrons wear fine clothes, ostrich plumes, tailor-made clothing, all fashioned from good material. They pay only ten cents for medical treatment. Fur coats, fur-lined coats, nice velvet hats, are seen at the clinics. The men patrons, many of them, are earning a fair wage. They can smoke, and spend hundreds of dollars for alcoholics, and immoral living, and then go to the free clinics for their arterio-sclerosis and other ailments, for only ten cents.

Everything can and must be paid for, except doctors. They can be gotten for ten cents. If the patrons are smart at lying, sometimes they get in free.

The profession must be humane, we must be *charitable*, we must not be mercenary. Sweet charity! Our blessed privilege of giving!

The clergy get paid. They do not preach for nothing. Is the body of less value than the soul? The poorest, smallest parish pays the clergyman. The doctor's bills go.

Lawyers do not work for nothing. No profession works for nothing except the medical. Is our work of less value than that of the clergy or the law?

The laity is getting to have a wrong idea of the valuation of medicine. Ten-cent clinics for those be-feathered, fur-coated and otherwise well-dressed individuals, teaches them to regard our work as worthless.

The clinical work is optional. But, supposing, for an argument, all the clinicians should refuse to attend? What *would* those "poor" creatures do? How pitiful would be their condition!

Why can not the clinicians have some compensation? Cannot something be done to give the profession the money earned? Lawyers' letters and suits are uncertain.

The clergy work among the poor, but they get paid for it. Are our services in the clinics so valueless, so little, that we must give them for nothing?

H. Louise Palmer, M.D.,
Winthrop, Mass.

PENNSYLVANIA NOTES.

The new Medical Examining Board, recently appointed by the Governor, will hold its first session, presumably in Hahnemann Medical College, in May, examining the juniors for their first two years' work, and the seniors for their final right to practice medicine, acting on the recommendation of the faculty of the College as to those who should be examined. Governor Tener, on December 1, named the members of the "one board" medical examination organization, officially known as the Bureau of Medical Educational Licensure, as follows: For the homœpathic school, Dr. G. A. Mueller, of Pittsburgh, in the West, and Dr. Daniel P. Maddux, of Chester, in the East. For the allopathic school, Dr. Adolph Koenig, of Pittsburgh, and Dr. John M. Baldy, of Philadelphia. For the eclectic school, Dr. C. L. Johnstonbaugh, of West Bethlehem. Dr. Samuel G. Dixon, Commissioner of Health, and Nathan C. Schaeffer, Superintendent of Public Instruction, were appointed as members ex-officio. The new board will succeed the State Medical Council and the examining boards representing three State societies in charge of the supervision of medical education and examination of applicants for licenses to practice medicine and surgery in Pennsylvania. The new board was created by the act of June 3, will have offices in the capitol, and conduct examinations at places it may designate.

Dr. William H. Somerville, of 1214 E. Columbia Ave., Philadelphia, died on the fifty-fifth anniversary of his birth. Dr. Somerville was born in Philadelphia and graduated from Hahnemann Medical College in 1881. Among the societies of which he was a member are Vischer Medical Society,

Germantown Medical Society and the Homœopathic Medical Society of the County of Philadelphia.

Dr. Samuel W. Sappington of Philadelphia has been elected Registrar of Hahnemann Medical College in place of Dr. J. E. Belville, resigned.

PERSONAL AND GENERAL ITEMS.

Cullis Home for Consumptives has recently received a bequest of $500 by the will of the late Emily A. Ellis of Boston. It is also made the residuary legatee in the will of the late Mary F. Landon of Brookline.

The town of Winchester, Mass., is to have a new and large hospital which is being built by the Visiting Nurses' Association.

The city of Cambridge, Mass., has recently appropriated a sum of money for the purpose of erecting two hospitals, one a general municipal hospital, the other for contagious diseases.

The late Emily A. Ellis of Boston has bequeathed $1,000 to the New England Anti-vivisection Society and $1,000 to the Massachusetts Society for the Prevention of Cruelty to Animals, provided that the Society will use the money for the purpose of abolishing animal experimentation.

BOSTON MEDICAL LIBRARY AUG 12 1913

Dr. and Mrs. Edward P. Colby celebrated on December 17 the fiftieth anniversary of their marriage, receiving then the congratulations of many friends. The *Gazette* adds its warmest congratulations and good wishes.

Dr. Emerson F. Hird, B. U. S. M. 1910, has finished his service at Trull Hospital and has opened an office at 65 North Main Street, Concord, New Hampshire.

Dr. Marion R. Horton announces that hereafter she will devote her attention exclusively to Obstetrics. Office 49 Thorndike St., Brookline.

The Boston Herald of Dec. 14, in reporting the death of Herbert N. Weston, a student living in Roxbury, stated that donations for public benefactions were made in his will as follows: Dr. W. T. Grenfell of the Labrador mission $2,000, Cullis Consumptive Home of Boston $1500, Salvation Army of New England $1,000.

One of the London sanatoria has recently received funds for the endowment of a bed in memory of Chopin, who died of tuberculosis at an early age. This bed is to be maintained for professional pianists affected with tuberculosis.

The Boston Medical Library receives a bequest of bonds valued at about $12,000, also of numerous medical books and papers, all the property of the late Dr. Oliver F. Wadsworth of Boston.

Dr. Lyman G. Haskell, class of 1897, B. U. S. M., has removed from Haverhill, Mass., to Jacksonville, Florida.

Dr. R. Agnes Hartley, B. U. S. M. 1899, has removed from 24 Cherry St., West Somerville, to 9 Upland Road, North Cambridge, Mass.

Dr. Hosanna Maligian, of the 1911 B. U. S. M. graduating class, has opened an office at 63 Main St., Brockton, Mass.

The Faculty of the Medical School of Boston University gave a reception to President Murlin, the newly elected head of the University, on the evening of November 28. The reception was held at the home of Dean

J. P. Sutherland, 295 Commonwealth Avenue. In spite of an unusually terrific downpour of rain during the entire evening, thirty-six members of the Faculty were present to manifest their interest. After a short business meeting, an informal reception and refreshments followed. The occasion was thoroughly enjoyed by all and enabled the Medical Department to come into closer contact with one who is manifesting active interest in its behalf.

GOOD LOCATION AVAILABLE.—I am giving up the practice of medicine and wish to dispose of real estate. I prefer to sell, but would consider leasing. Good will of practice gratis. Yale surgical chair and Campbell high frequency and X-ray coil for sale cheap. Address, Dr. A. F. Abbott, 79 Milk St., Boston, room 602, between 9 a. m. and 1 p. m.

WANTED—A resident physician for the Maverick Dispensary, East Boston. A large out-patient patronage and equally large district work. Board and lodging provided. Graduate physician preferred. Apply to Dr. D. G. Wilcox, 419 Boylston St., Boston.

SMALLPOX IN NEW ENGLAND.

During the past two months several somewhat isolated epidemics of smallpox have occurred. The principal one was that of late November, where in the vicinity of Warwick, R. I., about 150 cases were reported. A number of cases were about the same time reported in Auburn, Maine, and a little later quite an outbreak occurred in the vicinity of Burlington, Vt.; some also were noted in St. Johnsbury, while in Greensboro 75 were found. As far as is known all of these cases have been among individuals who either never had been vaccinated or who had been improperly immunized by vaccination.

NEW CLINICS AT VIENNA.

Early in November the three new clinics which have recently been erected in Vienna were formally opened to invited guests. The first medical clinic is in charge of Professor von Noorden, and has a capacity of 100 beds. Particular attention will be given to diseases of metabolism, and it is estimated that perhaps 50 per cent of all the patients will be in this class.

The second clinic is directed by Professor von Pirquet and will be devoted to the study and treatment of diseases of children. Professor von Pirquet has made renown for himself in the diagnosis of tuberculosis in children by the cutaneous test. This clinic will be somewhat smaller in capacity than the first, but is nevertheless unusually complete. Detailed description cannot here be given.

The third clinic is in charge of Professor Chiari. It is smaller than the others, having but 50 beds, and will be devoted largely to the study of laryngological topics. All of these buildings are in construction, modern in every respect, representing the co-operative work of builders, architects and physicians.

TAKING COLD.

A very good article appeared some months ago in the Annals of Otology, Rhinology and Laryngology by Kyle of Philadelphia. The emphasis put upon the necessity for individualizing the cases seems most laudable.

"Reviewing, then, these systematic conditions which bring about irritation of the mucous membrane which resembles taking cold, it certainly shows that in a large percentage of cases of so-called cold in the head, no one remedy could be applied, and that the individual must be studied as carefully for the predisposing cause or underlying element as though typhoid fever or a beginning pneumonia were suspected. In other words, every individual case should be studied from an individual standpoint. The in-

dividual study of cases enables the physician to scientifically apply his remedial agent and not empirically prescribe a cold remedy. My own experience has been that out of one hundred persons presenting themselves for relief of what they call a cold in the head, or having taken cold, or frequently taking cold, at least eighty per cent belong to the class of the systemic condition, either constitutional, organic, or chemic."

THE EXTERNAL MALLEOLAR SIGN.

C. G. Chaddock and A. H. Deppe, St. Louis ("Interstate Medical Journal," October), report their experience with the "external malleolar sign" of Chaddock, which is described as follows:—To determine its presence or absence the patient must sit or lie with the lower limbs extended and relaxed and wholly exposed. Relaxation of the muscles of the legs and feet is very essential in doubtful cases, and if possible the limbs to be tested should not be compressed or touched in any way except at the point chosen for application of the stimulus. The irritation of the skin is best done with a dull steel point (like a dull-pointed nail file). The area to be tested is the groove which outlines the external malleolus. In this groove the point of the instrument used should be drawn from behind forward until the depression between the malleolus and the cuboid is reached. This depression seems to be the most excitable part of the area. The degree of irritation employed should always be varied from slight stroking to rather severe scratching with considerable pressure, though it is never necessary to cause pain. Normally, this stimulus causes no movement whatever of the toes. "The abnormal reaction consists of extension or fanning of one or more or all the toes; a movement of flexion observed in a few cases had the same pathological significance," says Chaddock. It may be found with a negative Babinski. "A striking peculiarity of the external malleolar sign," says the author, "is that with a unilateral Babinski it is the rule to find the external malleolar sign on both sides." In a series of 99 cases of dementia paralytica, Babinski's sign with the ankle sign was found eleven times, the ankle sign was found single or double eighty-six times; neither sign thirteen times. "The phenomenon of Babinski certainly occurs without the presence of the external malleolar sign, though rarely," says Chaddock; "and thus is shown, as by variations of association, the independence of the two signs. Study of their associations and dissociations may afford valuable diagnostic facts."

THE ROLE OF THE MYOCARDIUM IN HEART DISEASE.

"The more we have learned about the pathological physiology of the heart from the newer studies by means of venous pulse-tracings, cardiograms, and electrocardiograms, the more it is borne in upon us that the function of the heart-muscle itself is what we wish to have most information about and what we know least about," says L. M. Warfield, Milwaukee ("Interstate Medical Journal," October). "Thus far we have no accurate means of measuring the actual power of the muscle, especially its ability to carry on the circulation against the odds of valvular disease, arterial disease, or disease of the muscle itself. If the muscle is strong it will be able to stand enormous degrees of strain without becoming damaged. Hearts, the subject of valvular lesions, are not necessarily weak hearts, says Warfield. The important point to bear in mind is that it is not the valvular lesion which determines the breaking down of the heart, but rather the state of the heart muscle. The author does not mean to say that hearts with valvular lesions are in any sense as strong as normal hearts. Indeed, the very fact that there is a valvular lesion means almost invariably that the myocardium is more or less diseased, usually from the same cause that gives rise to the valvular defect. The normal heart has a wide range of flexibility and great reserve power. The heart with a valvular lesion is always encroaching upon

its reserve power so that its range of reserve power is less than that of the normal heart. We have as yet, says Warfield, no means of diagnosing failure of heart-muscle until it actually fails. Time and again autopsy reveals such extensive myocardial disease that we wonder how such hearts could have carried on the circulation competently. The author asks us not to look to graphic records for our evidence of heart failure, but rather to the sensations of our patients, which are still the most valuable indications that the heart has failed to do its work."

THE PRACTICAL APPLICATION OF BACTERIAL VACCINES.

In a recent number of the Medical Record, Martin J. Synott, M.D., writes an article well worth the physician's careful consideration. Here he may find the reasons for his failure in the use of vaccines. Quotin[illegible] from this article: "The essentials of success in the administration of vacci[illegible] re the knowledge and experience necessary so to determine the dosa[illegible] and intervals between inoculations as to elicit the required immunizing resp[illegible]es and to bring the resulting antibacterial substances which circulate in the [illegible]od (opsonins) into the focus of infection.

"In generalized infections bacterial products are almost constantly set free in the organism and we have a succession of auto-inoculations. Immunizing responses follow in the cases which terminate favorably, because antibacterial elements are elaborated in the tissues and sent into the blood as a result of this stimulation. When a patient fails to recover this may be due either (1) to an inadequate or tardy immunizing response, or (2) to a severe or prolonged "negative phase" from excessive auto-inoculations, which retard the body's immunizing responses, thus making possible the involvement of tissues previously uninvolved and the starting up of new foci of infection, or (3) to some interference with the free circulation of the blood containing the antibacterial agents through or about the focus of infection.

"Vaccines aid in producing immunization only in subjects having the necessary power to react to this stimulus. If the immunizing mechanism of the body has been overwhelmed by excessive auto-inoculations, as may easily be the case in general febrile infections and in septicemias where the infective bacteria are in the blood stream, further inoculations with vaccines may do serious and even fatal harm by inducing a permanent negative phase. The most we may hope for from vaccines in such conditions is to raise the patient's resistance by cautious minimal doses. In the strictly localized infections, on the other hand, where no auto-inoculations are taking place, vaccine inoculations evoke prompt immunizing responses and the results from their proper use are preëminently satisfactory and brilliant.

"In the generalized infections the use of vaccines should be left to the experienced immunizator. In this class determinations of the opsonic index as well as the careful and correct interpretation of the clinical symptoms are of great importance as a guide to their use. In the localized infections, however, no serious obstacles are ordinarily encountered and there is a clear field for vaccine therapy.

"Finally, we must not regard vaccines as a "panacea" or cure-all. Considerable patient study and preparation are necessary to understand their limitations and contra-indications, and special knowledge and skill is required if one is to employ them successfully or at all times safely. Their improper application, particularly in acute general febrile infections, may do serious harm, and on account of this danger they should be used only by the duly and properly qualified."

ALMOST A FABLE.

The following story, recently reported in the October number of the North American Journal of Homœopathy, reads almost like fiction.

"Not so very long ago a man of some years, not too well dressed — in fact, a man who, one might say, was trying to look respectable on a very moderate salary — entered the front door of a large city hospital and in-

quired for the superintendent. The latter was summoned and was asked by the visitor if he would kindly show him the building.

The superintendent of such an institution is naturally a busy official, and the temptation under such circumstances would be to summon a nurse, or an orderly, or an office boy, and have the stranger shown the principal features of interest. Instead of this, however, the superintendent, in an affable manner, explained that he was busy just for a moment, but if the visitor would take a seat for five or ten minutes, he would be glad to show him around.

As soon as the superintendent was at liberty, the tour of inspection was begun and, observing the injunction to serve the best wine first, a start was made at the well-equipped operating rooms. Then wards and private rooms were inspected, and the superintendent was ready to usher the man out with a courteous "Good morning," when the stranger said he would like to see the kitchen. A trip was therefore made to the kitchen, and then the visitor wanted to go lower still and inspect the heating plant. So a descent was made to the sub-basement, and the laundry being looked into en route, the superintendent remarked that the trustees hoped some day to have money enough to equip a more up-to-date laundry department. The visitor said "Oh! you want money, do you? Well, it will come some day."

The ground floor being reached again, the stranger happened to catch sight of a small, temporary structure standing in the grounds, and inquired what it was for. He was told that that had been put up to be used as a pathological laboratory until such time as they had money enough to erect and equip a suitable building. And the old man said in an off-hand way, "Well, you'll get the money." Then with thanks to the superintendent for his courtesy, the visitor left the building.

The above is the story of why Hahnemann Hospital, New York City, has recently fallen heir to a bequest of about a million and a quarter dollars, for the testator was the old gentleman of not too attractive an appearance who had made the tour of inspection at that hospital less than a year before he died."

THE VALUE OF THE CLINIC.

In a recent editorial in the Medical Brief the educational value of the clinic is described as it appears in England and on the Continent. It says:

"The irresistible conclusion is that there are two distinct and separate schemes of clinical demonstration, both of which call for equal attention in the student's curriculum. Unfortunately, neither of them is given the place that it ought to have in the American school of medicine. One is the plan which finds its highest expression, perhaps, in the English schools, namely, the bed-to-bed plan that is carried out in the English hospital schools, (whence comes the well-known English expression "walking the hospitals"), in which the student is brought face to face with actual sickness in the role of a bedside physician, and given both opportunity and instruction for the bedside handling of the individual case. The other is the distinctively German plan of public clinics, where hundreds of cases of the same general type are to be seen each day, and where the eye and other senses of the student may be made accustomed, from the very multiplicity of instances, to the manifestations about which he has learned in practical detail from his bedside study.

We do not wish to be understood as implying that these two plans of clinical instruction are peculiar, the one to England, the other to Germany. Both are of course followed out in both countries. But it is in the former country that the first method excels, in the latter that the second is supreme. In America, unfortunately, where we ought to have a splendid combination of the two, we have nothing but the faintest imitation of either. We have, indeed, almost abandoned the English bed-to-bed plan, and made a great palaver about general clinics, but the truth is we have not the clinics to justify our talk. What we need in this country, for the most effective teaching of practical medicine (and that is, after all, the only kind of medicine for which the public cares), is a universal hospital-college scheme, *i. e.*, that every medical

school shall own, or better still, be owned by, a hospital whose wards shall form the stamping-ground of the upper students; and second, a general system of municipal clinics under which the sick wards of the city or country should be properly distributed as clinical material among the legitimate schools of medicine."

AN INTERESTING WILL.

The following text of a will, recently lodged for probate in Melbourne, is of some medical interest: "Being at this time in sound bodily and mental health, I hereby appoint my wise and most excellent wife sole executrix, trustee, and legatee of this, my will. Having promised my dead body to the Medical School for anatomical purposes at the Melbourne University, I desire that it be handed over to the order of the head of that school, whom I have requested to secure the destruction of the débris by fire before final disposal, according to regulations. This seems the only way: (1) It can be made to secure a useful purpose; and (2) besides will be a witness to my strong opinion that the State should exercise its admitted right to enforce a careful post-mortem examination of every dead body to ascertain the cause of death; my third reason, my protest against the foolish prevalent antipathy to giving over a body for this purpose. Very little consideration should suffice to convince anyone that were it publicly known that every dead body must undergo autopsy to ascertain the cause of death before its final disposal in any manner, murderers who have often entirely escaped notice by the neglect of that precaution, would find it impossible to continue their nefarious practices with impunity. Universal autopsy would thus be the best preventive of secret murder, and a decreased death-rate would perhaps show the extent of the need as well as the efficacy of the expedient. Having no property but my furniture, apparel, tools, watch, and library of books, I have made a catalogue so as to facilitate the sale." — The Medical Brief.

Two Shakers in one of the settlements in Florida have been arrested recently charged with having caused the death of one of their associates by the use of chloroform. The individuals admit that the charge is true, but claim that they thus acted by the earnest and long continued solicitation of the deceased, who was afflicted with pulmonary tuberculosis, and who begged to be relieved from her suffering.

A decision concerning the legal responsibility has not as yet been rendered.

DEALING WITH THE SAC IN THE RADICAL CURE OF INGUINAL AND FEMORAL HERNIA.

"There is reason to believe," says H. McClure Young, St. Louis ("Interstate Medical Journal," October), "that the ordinary indirect inguinal hernia is always to that extent congenital that a sac lined with peritoneum persists after the descent of the testicle is accomplished, and that this sac awaits only some extraordinary exertion or some relaxed condition of the parts to receive a loop of bowel from above. In dealing with hernia, therefore, the obliteration of this sac must always be insisted upon as the one all-important step in the operation. From this standpoint Young discusses the various operations for inguinal hernia, but says that none so logically answers the necessities of the condition as the one devised by Lexer, which he describes as follows:—The skin and aponeurosis of the external oblique are divided in the usual way and the sac freed as far up as the internal ring, where it is ligated securely as high up as possible, but not yet removed. A pair of slightly curved forceps is now passed under the free margin of the conjoined tendon, insinuating them gently upward between the muscle and peritoneum for a distance of about two inches. Here the point of the forceps is pushed forward through the muscle. Into the jaws of this forceps is now introduced the jaws of a second pair of similar forceps, locking them securely and withdrawing the first pair, thus conducting the second pair along the route of the first down toward the internal ring. The loose end of the sac is now clasped in the jaws of the forceps which have been thus

placed, and the forceps withdrawn. This brings the sac out through the muscular tissue at a point about two inches above the internal ring. It is pulled upon until the neck of the sac or point of original ligature comes to lie firmly against the posterior surface of the muscle at this point, a thing which requires no great amount of force. Two or three sutures now anchor the sac to the muscle and the redundant portion of the sac is cut away. The Bassini operation may now be performed or any other procedure resorted to which the requirements of the case may seem to indicate. Should the surgeon wish to avoid drawing the sac through the muscular tissue, he may proceed as follows:— Having ligated the sac, he leaves the end of his ligatures long and threads each upon a needle. He then removes the sac, and passes an additional suture through the neck of the sac and again threads each end upon a needle. He now inserts a finger under the free margin of the conjoined tendon and dissects it bluntly from the peritoneum for a distance of about two inches, at which point he passes his needles through the muscular tissue from within outward in such manner that his knots when tied shall lie in a direction parallel with the muscular fibres and about a centimetre and a half apart. The tying of these knots now draws the neck of the sac firmly up against the posterior surface of the muscle. The author says that when surgeons in general understand more perfectly the object aimed at and always to be kept in mind in such operations, the old practice of leaving the neck of the sac at the mouth of the hernial opening to invite recurrence will become obsolete."

THE MIDDLE CLASS CONDITION.

A short time ago we received for review a very interesting book entitled "One Hundred Surgical Problems." A proper review of this will appear elsewhere. A rather interesting part, however, seems to be worth bringing more directly to the attention of our readers. Dr. Mumford, the author, speaks as follows:

"I have long held that our present method of dealing with persons of small means who are the subjects of obscure illness is unsatisfactory. Patients of the poorest class can secure expert examination and advice by entering a large hospital, where they have the benefit of numerous consultations with different experts. Much in the same way wealthy persons can employ the services of numerous experts to determine their ailments while they pay large fees for such information. Persons of limited means, however, must not expect to be treated as paupers, nor can they afford numerous expert opinions. Such was the case with Mr. M. He lay in bed many months without a satisfactory investigation of his case. His family physician, although a man of excellent attainments, was unable to provide several expert opinions, and the patient suffered from that fact. As the situation stands at present most of those unfortunate patients are cut off from the best of modern scientific medicine."

SEX DETERMINATION.

"Do you wish your next child to be of the same sex as the last one born or not?

For if you want your next child to be of the same sex as the last one, you must *not* allow yourself to become pregnant on the *odd* number of your menstrual periods. If you want a different sexed child from the last one, you must *not* allow yourself to become pregnant on the *even* number of your menstrual periods.

You note that I suggest that we arrange matters with the mother; for while the father may think with pride of the coming offspring as one who shall bear his name, it remains with the mother whether this offspring shall rule the business or financial world as a king, or dominate the social circles in which she moves as a queen."—The Journal of the Medical Society of New Jersey.

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ORIGINAL COMMUNICATIONS.

PERIODIC VOMITING.

By WALTER WESSELHOEFT, M.D., Cambridge, Mass.

Like certain other affections not readily classified or explained by laboratory or other current theories, this somewhat rare cause of severe suffering has not, so far as I am aware, been subjected to the searching inquiry expended on the more common diseases. While the symptoms, as we all know too well, are most pronounced, and in certain aspects peculiar, their causes and relationships remain obscure and baffling.

In order to recall to your minds the clinical picture of the disease, I will offer the records of three cases, of which two are still under my observation, the third having terminated fatally more than a year ago.

Case No. 1.—Boy, aged four, well grown though slight, and with well-marked remains of rickets; fairly well nourished, somewhat anæmic, precocious, nervous, active; no children's diseases; adenoids removed a year ago; tonsils slightly enlarged. Mother comes of a distinctly neurotic family, but is fairly strong. Father vigorous and sound.

When 18 months old child began having occasional attacks of vomiting, not unlike those following digestive disturbances, but clearly not attributable to errors in diet. The attacks lasted from three to six hours, were preceded by no observable prodromate and followed by no more than temporary irritability of the stomach.

At the age of two and one-half years the attacks had assumed the distinct form of cyclic vomiting, coming on with much regularity about every three months and usually after two or three days of great irritability, constipation, loss of appetite and feverishness, although occasionally the child was awakened out of its sleep by a sudden attack. Before this the intervals were less regular, the attacks coming sometimes as often as once in six weeks or delaying from four to six months. They now lasted fully two days and nights with excessive nausea, the ejection at first the last meal, usually undigested, and later of a little mucus and some yellow bile. While forcible and attended with much retching, the vomiting was not projectile. The retching commonly preceded the ejection and continued after the stomach was wholly emptied. After straining and gagging in the most distressing manner dur-

ing two or three minutes, while constantly crying out for water, the child sank back exhausted, dozed for fifteen or twenty minutes, when the retching again set in.

After twenty-four hours the spells of retching came at longer intervals, with more sound sleep during the respites, but were no less violent, and the intense thirst and faintness caused great suffering during the waking moments. From time to time the child cried from an undefined pain in the abdomen, referred either to the epigastrium or the umbilical region. During the attacks the stools, which usually showed nothing abnormal, often became loose, slimy, light colored or grayish, without undue fetor, and were expelled involuntarily as the result of the severe straining. The urine, which was sufficiently abundant and normal at first, became scanty and high colored towards the end of the attacks. Test made during the period and during the attacks showed nothing more than an excess of urea, but not to a startling degree.

After the gradual subsidence of the attacks the prostration was extreme, with great thirst and ardent hunger, but even the smallest quantities of food or drink immediately excited the retching again and not infrequently the pain. This condition usually lasted about forty-eight hours, after which time minute quantities of whey or thin seamoss jelly, slightly sweetened and flavored with cinnamon, became acceptable.

At the end of a week the boy was again himself, hungry, eating heartily, with normal stools and urine; though pale, full of life and activity. The promptness of the restitution after the attacks was always a matter of surprise, as was the perfectly normal condition during the intervals. During the attacks all attempts to give relief appeared only to aggravate the distress. Here and there excessive sweats occurred, not only as the result of the muscular effort and nausea, but during the short naps following the retching. The hair then became very wet, and the pillow as well, as so commonly seen in rachitic children.

At five years old, the age of the child when I first saw him, the attacks had lessened neither in severity nor frequency; in fact, they were coming at shorter intervals and more irregularly, one attack having followed the other within three weeks without known cause.

Despite the long persistence of the trouble, the boy, as I have said, was fairly well nourished and very free from ailments during the intervals, eating and sleeping well and playing with superabundant energy.

Case No. 2.—Girl aged four and one-half years. When first seen, about two years ago, fragile, pale, with slight frame and high, prominent forehead, pigeon-breasted,—a deliberate, elderly sort of child, but by no means lacking in intelligence. No children's diseases, no operations, but frequent attacks of bronchitis. Mother highly neurotic, flat-chested, anæmic, always ailing, has herself suffered from severe vomiting spells during childhood and

adolescence, but not of the cyclical form, mostly produced by some mental emotion. The father is nervous, ambitious, but stout and vigorous.

The child's vomiting began at six months, when without apparent cause a whole meal was suddenly ejected, and no food could be given for twenty-four hours. After this the usual bottles were accepted and digested without difficulty. From this time forward similar attacks occurred at intervals from three to six months, always attributed to some external cause, such as taking cold, bad milk, etc., but without reason. With lapse of months the spells became more typical of the malady, growing more severe and persistent. With the approach of the fifth year they came on with some regularity every four months, mostly without warning, but now and then preceded by some slight malaise, indisposition to eat, lassitude and nervous irritability. While the severe retching and vomiting invariably occurred much in the same way, with great thirst, prostration, sweating, brief intermissions of rest, and slight rise of temperature, the accompanying symptoms varied in an uncertain manner. During some attacks constipation lasted throughout, during others this gave way if it existed early, to loose, slimy, yellowish discharges, apparently independent of the severity of the attack. The abdominal pain, too, did not invariably attend the attacks, and this also did not seem to be influenced by the severity of the vomiting or strain. In this case, as in the first, the pain was difficult to locate, intermittent and without tenderness to pressure. After many hours of vomiting the acetone odor of the breath became very marked and the whole appearance of the child that of approaching collapse. The effects of the attacks in this case were of longer duration than in case number one, the child remaining weak and spent for nearly a week, but gradually returning to its normal state.

By the end of the fifth year the attacks, though still severe, came at ever lengthening intervals and the child appears now to have outgrown them. During the late epidemic of septic tonsillitis the child was slightly affected, much less than the other members of the family. The disturbance set in with vomiting much in the old way, but this soon ceased, the tonsillitis taking the mild course usual with children.

I cannot say that the results of my treatment have been brilliant. In case number one, by careful attention to diet and general hygienic conditions, with salt-water rubbings and calcium carbonate, the intervals between the attacks grew longer and the general health showed marked gain, especially in the matter of nervousness. During the attacks neither apo-morphine, soda bicarbonate nor cuprum had the least effect in lessening the severity of the symptoms or shortening the attacks. It was absolutely impossible to administer anything by mouth, and rectal injections were not retained, or caused so much discomfort in the administering that they were speedily abandoned. All disturbance of the child caused distress, and the hypodermic application

of drugs was so actively resisted that nothing remained but hydrotherapeutic measures. Warm baths at 85 degrees and cold compresses to the abdomen afforded some relief and were asked for by the child, but on the whole the attacks were allowed to take their own course.

In case number two the child throve most satisfactorily under calcium phosphate and is now, as already stated, safely beyond the danger of renewed attacks. She plays vigorously, goes to school, and instead of the old look and old ways has a more cheerful, childlike aspect. While in general, during the attacks remedies proved no more successful than in the first case, I will mention that in one attack, one of the last and most severe, which had begun in all respects like its predecessors, and with all the appearance of going through its stages like these, pulsatilla 2x held in the mouth without swallowing during the respites between the retching was followed by exceptionally prompt cessation of the attacks and very speedy recovery from its effects. But the same result was not observed in later attacks. The temperature, pulse and laboratory test in this case were much as in the first mentioned, and failed to throw light on the nature or cause of the disease.

The third case, while resembling in symptoms and clinical course those above related, differed widely from them in the fact of its occurrence in an unmarried woman of seventy. The patient was tall, vigorous, well-nourished, clear-headed, fond of good living, but moderate and regular in her habits; usually well, free from neuropathic taint, and of a strong character which caused the control of a somewhat scattered family of men and women to be ceded to her as of her right. Mother died young in childbirth; father lived hale and well until 86. Occasional slight digestive trouble, hemorrhoids, and later, after the menopause, a small fibroid, causing at long intervals very slight hemorrhages without other suffering or disability, were the only abnormal conditions to be noted beyond the main trouble.

This appeared first at the age of 70, when patient was at the seaside in apparently the best of health. The first symptoms were nausea and a tendency to sweat, with a dull epigastric pain, coming on while walking several hours after a light meal, and speedily ending in brisk vomiting. The attack was short, lasting in all about six hours, but was attended by intense thirst, great prostration, sweating, and later by severe abdominal pain of a pressive, nervous character, extending from epigastric to umbilicus, but without tenderness other than a great discomfort on palpation. That this could have had no connection with the fibroid seemed probable from the fact that this remained insensible, movable and small, without renewal of the hemorrhage occasionally observed years before this attack.

Despite all remedies, including stiff hypodermics of morphine, the excessive nausea and pain and spells of retching continued until midnight, when sound sleep brought relief, and left

the patient wholly comfortable in the morning, barring the itching and dull headache of the morphine. Before the end of the day the patient was again at her accustomed activities. The attack was, of course, attributed to some error in diet, catching cold or some equally improbable etiological factor, and after the prompt recovery had no further attention. But at the end of six months another attack, more severe and of longer duration, occurred, lasting fully three nights and days, coming on in the same sudden and unaccountable manner; and after extreme suffering from retching, pain, sweat, exhausting, without relief from drugs or turpentine, hot bottles, etc., was followed by speedy and complete recovery in less time than the duration of the attack, leaving the stomach and entire digestive tract in the perfect performance of their functions. In the next three years the attacks occurred with much regularity at intervals of six months, but caused no uneasiness on the part of the attendant physician notwithstanding the increasing pain and suffering accompanying them. Carelessness in diet was held responsible for the recurrence; the fibroid was suspected at one time and submitted to the consideration of distinguished surgeons who, however, decided against operation. I first saw the case in the Spring of 1909. The patient was then 77, vigorous, active, as above described, and of an unusually cheerful disposition. I was called in the night, after having been consulted a short time before for the hemorrhoids. Patient had been gardening during the afternoon, had eaten a very light meal in the evening, gone to bed comfortably and to sleep after a quiet game of cards, but had been awakened at midnight by the nausea, which was at once followed by the vomiting. The aspect and demeanor of the patient were in all respects those of the younger subjects, lying with her head forward over the edge of the bed, the lids drooping, face pale, bathed in sweat, the whole frame relaxed in the intervals between the vomiting spells which came every fifteen or twenty minutes with the same violent retching, and straining to throw up a little mucus, some watery matter, minute particles of partially digested food, and, later, flecks of blood and a little yellow bile. During the first hours there was no pain, but gradually, after many retching spells, it came on, dull, pressing, nervous, uncertain in location, chiefly from the epigastrium to below the umbilicus, practically suspended during the retching, but growing so severe between times as to rob patient of the short naps she had enjoyed earlier. Tenderness there was none, but great objection to the pressure of palpation by reason of the distressing nervous sensation caused by this; no tympany; abdomen soft, relaxed, perhaps slightly retracted. Fibroid hard, movable, about the size of a grape fruit, without sensation. Towards morning a defecation of normal appearance and consistency took place voluntarily, for which the energetic patient insisted, despite her prostration, on going without help to the bathroom. The discharge brought no relief.

As there was no temptation to use morphine, since on former occasions it had brought no relief, and all other medication, either by mouth or rectum, was out of question, the therapeutic problem was not of easy solution. Hypnotic suggestion was without avail; cold to the epigastrium and ice held in the mouth gave some slight relief and were instantly demanded, but the attack took its three-days' course, as on former occasions, when recovery set in speedily, so that at the end of a week the patient was again devoting herself with enthusiasm to her garden.

During the interval careful examinations were made of urine, feces, blood, reflexes, etc., without eliciting anything of note. Absolutely no light was thrown on the nature of the case. The most careful diet was prescribed and followed, together with other hygienic measures, but in six months another attack followed.

Although the general health improved in certain directions, especially in the matter of the hemorrhoids, the slight digestive disturbances and a tendency to insomnia which had been troublesome for years, it was plain from the severity of this new attack, and from those that followed that neither the medicines prescribed nor the other measures had reached the center of the trouble. Despite the counsel of the most distinguished diagnosticians, the attacks from now on came at shorter intervals, causing a marked failing in health and strength, though without corresponding waste of tissue. During the two last months the general course and appearance of the case was not unlike that of cancer of the stomach; distress after taking food, irregular vomiting, etc., but cachexia and all internal hemorrhages or signs of neoplasms were absent. The mind throughout remained perfectly clear. Death occurred from exhaustion in 1910. An autopsy was not permitted. As a medical relation, who saw the patient during her last hours, declared the case to be cancer of the stomach, the death certificate was so made out.

As no therapeutic success can be recorded here, I must content myself with calling attention in conclusion to the close resemblance of the phenomena in the earlier stages of the last case with those of the first two. The disease occurring most commonly in infancy and early life. The advanced age alone of the patient does not account to me for the fatal termination, and while it is not impossible that during the last months malignant disease may have developed, this certainly had no part in the phenomena of the first nine years of the disease, during all of which time the patient's health was perfect in the periods of freedom from vomiting. To my mind there was something here which in the children was overcome by the processes of development, the processes now replaced by those of retrogressive changes of age. Under these the organism was clearly unable to resist or overcome the causes of the disease or its products, but what there may have been I am at a loss to suggest. Like infantilism and certain forms of premature senility, this cyclic

vomiting appears to depend either on the cessation or possibly over-activity of some inward secretion, but which of the ductless glands may be at fault, or which of the enzymes which play so important a part in all vital processes, does not appear.

THE MILK QUESTION AS IT RELATES TO THE PHYSICIAN*

By CHARLES L. NICHOLS, M.D., Worcester, Mass.

As an economic question the value of milk may be seen when we remember that 10,000,000,000 quarts were used as a food in the United States last year. That means about $800,000,000 expended by the people for this product. If we recall the recent examination of the milk contractors in this state and in New York, we can at once see that many of these firms have gained riches in the business, and can rest assured that the "poor farmer," so-called, need not be poor in pocket if he were less poor in his methods of producing this valuable addition to our food supply. Let me not be unfair to the farmer, however, for it *is* true that the demands of modern life and modern knowledge are such that it is impossible for the average small farmer to live at the present price he receives for his milk, if the necessary improvements in his processes are to be made. These demands, just and imperative, will result in the large proportion of small farmers giving up their business, as they have neither the capital to put into new buildings and apparatus, nor have many of them education or the willingness to change their methods inherited from ancestors whose mode of life and physical endurance enabled them to live in spite of the many sources of disease with which they were surrounded.

That milk is an important article of food in this country has been shown by the number of quarts consumed last year, and it should have been stated that this does not include the enormous quantity used to produce the butter and cheese also ingested by us. We can go further and say that in comparing a list of our common foods, including meats, fish, cereals, vegetables, fruits and nuts, there is no other single food which contains the three classes of nutriment — protein, fat and carbo-hydrate — so evenly divided among their constituents, nor is there any other which could be used for food for so long a time as milk without other admixture. Nuts, especially peanuts and almonds, contain a larger amount of nutriment than milk, but these could not be employed as the sole article of food. It is therefore possible to say that milk, because it contains all these food groups in the most correct proportions, and is so easily, rapidly and fully assimilated, is the most important food within our reach.

In a pamphlet issued by the State Board of Agriculture (No. 39) is a Table comparing the economic value of the various common foods with milk. The conclusions are as follows: Milk of average quality at market price, eight cents, furnishes protein and a definite amount of energy cheaper than the more expensive cuts

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* Read before the Hughes Medical Club.

of meat, and much cheaper than oysters and eggs. The cereals supply protein for less cost, but the smaller proportion of that protein and the bulk required to obtain the same result, excludes them. Vegetables such as corn and celery, fruit such as strawberries and bananas are much more expensive. Put in another way, one dollar expended for milk furnishes 7.400 calories, while the same amount in sirloin steak gives but 3.417 calories. About the same proportion holds true for chops, oysters, and eggs. In this way we see that milk is both the most important and most valuable food we have. Also that at its present price it is the cheapest food and that therefore we can afford to pay a higher price for an improved product.

The milk of yesterday is no longer possible for us either as housekeepers or as members of the medical profession, and the demands we now make of the milk producer are such — reasonable though they are — as must result in an increase in the cost of this food. *Clean* milk is the cry of today and *clean* milk we must and will have. It would be interesting to learn who was the first person to call this the Clean Milk question, for no other word could have appealed to so large a class of people or aroused so much determination to secure this result.

Unfortunately this food which we have found so useful for the complex organism of the human race is equally nutritious for other bodies. A large proportion of the bacteria, harmful and harmless, thrive and develop rapidly in milk.

It is of course well known that these bacteria are no menace in themselves, but that the toxic ptomaines and toxalbumin which result from their fermenting power are the cause of illness. Experience and careful research have shown, however, that the bacterial count of milk is a fair index of the health of the community.

It is for this reason that the number of bacteria is watched with such care, and their increase in milk considered such a menace to health. It is true that a large proportion of these bacteria are harmless, — indeed many are perhaps essential to health,—but as no test has yet been devised to distinguish between the harmless and harmful ones, we must be content to say that the lower the count the less chance there is of harmful bacteria being present in milk.

Five years ago Prof. Kinnicutt of the Worcester Polytechnic Institute investigated the milk supply of that city. Three hundred and four samples of milk were examined between March and June 1905, fifty samples being taken from private houses, one hundred and twenty-seven from groceries, fifty-eight from restaurants, and nineteen from lunch carts.

The tests used were to determine the number of bacteria in each sample, and knowing the rapidity of bacterial growth to learn the relative care exercised in these various places, and the probable safety in using the milk from such sources. More than seventy-five per cent. of the samples from private houses contained

less than one hundred thousand bacteria per cubic centimetre. Fifty per cent. of the restaurant samples contained more than five hundred thousand and thirty-three per cent. more than a million. Forty-four per cent. of the grocery store samples had over five hundred thousand and thirty-seven per cent. over a million, while seventy-four per cent. of the lunch cart samples contained over five hundred thousand, and more than seventy per cent. over a million.

The inference from this careful investigation is that, while milk in private families was relatively free from bacteria and therefore excellent, that obtained from restaurants and groceries was very poor, and the lunch cart samples were exceedingly bad. The Massachusetts law states that no milk shall be sold containing more than five hundred thousand bacteria. It has been shown that beyond this number milk becomes a distinct menace to the health of the community. Yet the figures above quoted show that forty per cent. of all these samples contained more than that limit and thirty-one per cent. double the amount. It should be stated in defense of our Boards of Health, State and Municipal, which seem to allow this, that their powers in this matter are only advisory and they are not empowered to act with legal authority except in emergencies.

Let us now turn to the death rate to illustrate the importance of *clean* milk. All infants for the first year of their lives are brought up on milk, and today two-thirds of these infants are fed on cow's milk.

In the second year about one half the infant's food is also milk, and in this case practically all cow's milk. In 1909 one hundred and thirty-six thousand infants died in the United States before reaching the age of one year, and of this number fifty thousand deaths were due directly to intestinal disorders. These figures do not take into consideration the thousands who were sick and recovered, but do show the yearly loss the country sustains from this source alone. Again, in 1905, one hundred and sixty thousand persons died in this country of tuberculosis in its various forms and of this number thirty thousand were infants. The New York State Board of Health has shown by a series of careful investigations that one-fifth of all cases of tuberculosis in young children can be traced directly to the tuberculosis of the cows from which their food was obtained. This source would therefore add six thousand more babies whose death must be referred to impure milk.

We have noted the value of milk as a food; the presence of bacteria in this food, and their effect upon the lives of young children. Let us for a moment ask how these enter into this food product to work such havoc. Normal milk in the udder of a healthy cow is practically sterile, that is, free from bacteria. It was supposed that it was absolutely so, but a small number have been found in so many cases that the term absolutely sterile cannot be used.

The large proportion of bacteria, however, are taken into the milk during the process of milking, and increase with greater or less rapidity according to the care employed in handling and preserving it after it leaves the milker's hands. The dirt, hair, or manure of the cow, and the hands and clothes of the milker are the primal sources of bacteria in milk.

There are three classes of bacterial affections: intestinal, contagious disease and tuberculosis.

1. Intestinal affections. As was seen, fifty thousand babies under one year died in 1909 of intestinal troubles, but it has not yet been definitely proven what the forms of bacteria are which produce such widespread mischief. The dysentery bacillus is not very frequent, and it is believed that many strepto- and staphylococci, which are so commonly found in milk and which are ordinarily harmless, are the cause of most cases of ileo-colitis of infants. The explanation given is that these bacteria, destroyed so readily in the upper intestine of the adult, meet in the infant with less resistance and hence in the ileum and colon produce the fermentation products which result in ileo-colitis.

These bacteria enter the milk on the scales and hairs of the cow, and in the manure which in small particles fall or are switched by the tail into the milker's pail. This manure is a real existence in milk and it has been estimated that the city of New York drinks daily many hundred pounds of the manure, and that in Berlin the amount rises to one or two tons. Unpleasant as this sounds manure of itself is no menace nor are hairs or scales, but it is the bacteria which they bring with them and which by their rapid propagation result in sickness and death. In a series of careful investigations Prof. Prescott of Boston reports the following results. A piece of hay one inch long was placed in a quart of sterile milk and kept at room temperature. In thirty-six hours the milk contained over three million bacteria per c.c. Two pieces of sawdust from the stable floor were placed in a quart of sterile milk and in twenty-four hours there were three million bacteria to the c.c. A hair from a cow's flank was placed in a pint of sterile milk. After shaking the milk one minute it contained fifty-two bacteria; and after thirty-six hours over five million were present.

In a general way it may be stated that, under favorable conditions of heat and the proper medium, one bacterium will subdivide and this process be repeated until in seven hours over one million will be produced, or to put it in a more concrete form, seventy-five typhoid bacilli in one c.c. (16 drops) of milk under proper conditions will become one hundred and twenty million in two days.

These few illustrations will show what happens to milk containing small amounts of filth, and it would take no long flight of imagination to realize the consequences of less favorable conditions.

Little then as we know of the kind of bacteria to which the first class belong, the result is sufficiently important for us to make strenuous exertion to secure milk which will be practically clean.

2. Contagious Disease. Epidemics of scarlatina, diphtheria, and typhoid fever have been frequently traced directly to the ingestion of infected milk. This infection comes, must come, from the contamination of the milk during the process of milking or the preparation for market of this product.

Over one hundred epidemics of typhoid fever in the United States have been traced to this source. The experience of Worcester one year ago is an excellent illustration of this fact, and of the skill of our City Board of Health in tracing the cause. After three cases of typhoid fever had been reported in consequence of the suspicious character of these cases, the Board of Health investigated the milk supply, and found that the distributor was a contractor who gathered from several farms. Each of these farms was examined; one suspicious location was found, and the milk supply stopped within twenty-four hours of the report of those three cases. Later it was proved that the milker in this location was living in the fields, with his cows, in a temporary shed, was suffering from a mild form of typhoid, and had been absolutely without thought of the disposal of the excreta or the care of his person. Over two hundred cases developed from the milk already used, or from the cases thus infected, but not one after the source was cut off. The death rate from these epidemics is too well known to require discussion here, but it is well to emphasize the fact that such epidemics are due to preventable causes, and that the part played by milk should be constantly borne in mind by the physician.

The third class of cases induced by bacterial infection — tuberculosis—is so complex that I approach it with diffidence. When Koch in 1882 announced his discovery of the tubercle bacillus the path of the medical world seemed clear, and Von Behring stated "that milk fed to infants was the chief cause of consumption." He even went so far as to demand that no person should use milk containing more than one thousand bacteria to the c.c. — Then came the dictum of Koch that human and bovine bacilli were not alike, and the medical world once more asserted the innocuousness of milk. From that date the struggle has been bitter and it is not yet absolutely decided.

The experiments of the United States Department of Agriculture and the investigations of hundreds of careful observers, however, have led to the strong inference that, while human bacilli are not present in cow's milk and bovine bacilli are, the latter are a frequent cause of abdominal tuberculosis which demands a heavy toll each year from the infants of this country.

It was formerly believed that infection by tubercle bacilli was accomplished by inhalation, but within a few years another theory has been advanced, and apparently with strong reason — the theory of ingestion.

A recent article in the Medical Record, (October 28, 1911) by Dr. T. G. McConkey, states that particles inhaled do not reach the lungs but are ingested, absorbed by the lacteals of the digestive

tract and reach the lungs by way of the thoracic duct and the circulation. It is unwise to follow his argument here, but two experiments are of interest. It was proved that "steel grinders' phthisis," and that class of formerly called inhaled diseases, was due to swallowing the dust. This was accomplished by tying the esophagus of the animals experimented upon and feeding some after exposure to the dust. Normal control animals showed dust in their lungs, while those exposed to the dust with closed esophagi and not fed were free from those particles in the lungs.

Other experiments proved that animals could be infected with tuberculosis of the lung either by ingestion of the bacilli or by inoculation in various localities, even at the ends of the tail. As far back as 1909, the United States Department of Agriculture in an article quoted fourteen important authorities, and in particular the volume on this subject by Calmette, all of which show conclusively that tubercle bacilli can and do easily pass through the intestinal mucosa into the lymph stream, from there into the circulation and thence into the lung, and that it is the common mode of infection. In this latter article Aufrecht is quoted as stating that "his pathological investigations show that the initial changes do not spread from the terminal branches of the bronchi, . . . but that they are associated with the terminal capillaries of the pulmonary arteries," a statement which also strengthens the ingestion view.

If now the ingestion theory is proven true, the infection of children by milk of tubercular cows becomes a still more burning question. Leaving out the cases of tuberculosis of the udder (garget), which can be always discovered, the other source of trouble is from manure. The cow, unlike the human species, does not eject its sputum, but swallows it and the resultant passes away with the manure. As seen above this is so commonly found in milk that it is a constant source of infection, and with the diminished power of resistance of the infant becomes a very real peril.

We have seen that bovine tuberculosis is a real source of danger to the human species, and that the ingestion theory has strong reasons for its acceptance. If now the theory advanced by Dr. McConkey holds that all tubercular infection originates in childhood, and that its latent stage lasts many years before the pulmonary form develops, we have still stronger reason for suspecting the tubercular cow.

Whether this be true or not, whether direct infection from the cow is common or rare, it belongs to the medical profession to avoid all causes of disease. Altruism is not uncommon, but it is largely impersonal, and it is only when a case comes into our own circle that we are thoroughly aroused over any subject. One of the most noble charities of modern times is that of Nathan Straus, begun in 1894 because of the sickness of his own infant who was fed upon the milk of a cow which died in consequence of tuberculosis. Last year this charity distributed more than four million bottles of pasteurized milk in New York, in addition to stations in other cities in this country and abroad.

It is not my intention to leave you with the impression that all bacteria contained in milk are harmful. Not only are the large proportion harmless, but some seem to be absolutely essential to produce results we desire in the commercial world, of which the tone of butter and the ageing of various forms of cheese are common examples. Lactic acid fermentation, when accomplished by a specific form of bacillus, gives, as you know, a form of sour milk used to great advantage by the profession. It is claimed, indeed, by Prof. Metchnikoff that degeneration of the arteries can be prevented and old age delayed by the use of milk fermented by this particular species of bacteria. The alcoholic fermentation of milk to obtain Koumiss and Kefir, two forms of fermented milk, has been practiced in Russia and the Caucasus for many generations. In spite of this, however, it is well for us to remember that there is no royal road on which the harmless bacteria travel to the exclusion of those which bring to the human race disease and death.

In all these cases the remedy is *clean* milk. This means clean cows, clean milkers, clean handlers, and one more thing too little considered, clean methods in the homes where the milk is used. How this is to be accomplished in a large or even a small city is a serious problem. The milk for the city of Boston comes from various sources, two hundred and more miles from this city. A portion of that furnished to New York City comes from Canada! It is furnished by scores of farms, and handled by a large number of men. This problem, however, is not so hopeless as it appears, and considerable progress has been already effected by constant agitation of the subject and by efficient legislation.

The method of pasteurization, already spoken of in relation to the magnificent charity of Nathan Straus, is employed largely in cases where uncertainty exists in regard to the quality of the supply. On January 1 of this year, I believe, the law was put into effect that no milk should be sold in the City of Chicago except that which was certified or was pasteurized.

Similar laws are being prepared in other cities—or the subject is under consideration toward that end. Over one hundred cities have already forbidden the use of milk from any cows, except those which have successfully passed the tuberculin test.

This step has not been taken without vigorous opposition on the part of farmers and dealers. In Minneapolis an ordinance was passed that all milk from other than such sources should be seized and destroyed. This matter was taken to the courts, and the decision was rendered that it was a legislative rather than a judicial question, but that such legislation was not a violation of the constitutional rights of a citizen. In Milwaukee after exhaustive investigation it was considered proved that bovine tuberculosis was communicable to human beings through milk as a food—that cows infected with tuberculosis disseminated the T. B. several years before symptoms could be detected by physical examination. Dairymen appealed to the Supreme Court of the State,

and were defeated. Also to the Federal Supreme Court with like success, on the point of law. In Iowa, however, a decision against tuberculin testing even was rendered on the legal grounds of municipal rights in that state, while Washington, D. C., reversed that decision for the District of Columbia. Thus you can see how much the country has been aroused on the municipal side of this question.

Objection to the process of pasteurization was very strong because the method used in commerce with large quantities was not real pasteurization and failed of success and hence resulted in a false sense of security; also because the employment of this method still retained filth and dead germs, and seemed to be an easy way of avoiding the expense entailed by clean milk methods. A more serious argument brought forward by the medical profession was that the use of pasteurized milk resulted in scurvy and wasting diseases of the infant. This latter argument seemed so strong and so important that Mr. Straus decided to close his stations last year, but careful investigation by the New York Milk Committee has resulted in a belief that this process did not necessarily induce scurvy and that it was absolutely effective in destroying the germs of tuberculosis and the other contagious diseases often transmitted by milk. The conclusion was that while this process should not take the place of the methods for producing clean milk, it could be used without harm if watched carefully, and should be used until certainty regarding the tuberculosis question was attained or the methods for securing a pure clean article had been perfected.

This then in a few words is the condition of the milk question in relation to the general public today. That cleanliness of process is possible on a reasonably large scale, let me quote Dr. Rosenau of Boston. He stated in Philadelphia this Spring that a man in Brookside, a town on the Hudson, had for two years produced day after day a milk for the ordinary market so clean as to be practically sterile by following strictly the precautions employed in the modern milking stables. He said that this seemed a miracle of milk production, but that it was within the reach of any one who carefully and persistently followed out the proper methods.

But no matter how careful the milker or how efficient the handler and distributor may be, the benefit can be entirely destroyed by carelessness in the home. If this milk is allowed to stand in the sun after it reaches the home, if it is kept open in the kitchen before or after using, if it is not retained at a low temperature until the moment of use there is little benefit in all other precautions. Indeed so important is this question of keeping the milk cold that one of our large contractors stated to me that experiments proved to him that if a milk was cooled at once when taken from the cow, and retained at a temperature not above fifty degrees F. every moment until used, he could guarantee the quality of any milk and its freedom from deleterious effects.

This man keeps a farm for observation purposes, and a bac-

teriological laboratory at which each specimen of milk from the various sources derived is daily examined in order that the milk he furnished the City of Boston may be kept at high standard. The usual harmlessness of ice cream may be cited as proof of this contention on the part of the contractor.

In addition to the general milk supply of our cities, and because the milk supply is not found adequate to the purpose, the medical profession has demanded a limited amount and an especially improved quality of milk for the infants and invalids under its care.

This end is attained by the labors of the Milk Commission — a voluntary association which secures milk for medical use from farms which are carefully watched by themselves and guaranteed in consequence.

This milk is called *certified* or *inspected* according as the precautions employed are more or less strict. In the former case the bacterial count is limited to ten thousand per c.c., in the latter to fifty thousand — in each case a great improvement over the municipal regulation of two hundred and fifty or five hundred thousand. These precautions mean larger expense and greater care on the part of the farmer but the resulting product attains a price which should and does recompense him for his added cost.

Dr. Geier of Indiana stated that a farmer in the Northwest who produces forty thousand quarts of milk per day from his own farms pays six thousand dollars a year for the inspection of his herds, but finds that it saves him twice that sum in healthy cattle and in actual money return.

The first milk commission was originated by Dr. Henry L. Coit of Newark, New Jersey, in 1890. Today over sixty milk commissions are in active existence, and yet, like so many of our methods of charitable effort, these organizations reach but one per cent. of the amount of milk used in this country.

The very rich and the very poor are the only people who can derive profit from this as from most other methods of civic advancement. While the milk commissions prepare certified and inspected milk for the sick, and this product is confined to that class because of its greatly increased price, the very poor are supplied from clean milk stations.

The first of these stations was opened by Dr. Koplick in 1889, at the Good Samaritan Hospital, New York, and in 1909 there were one hundred and fifty-nine such organizations. The stations are, with few exceptions, opened for the summer months only. To them the mothers bring their babies who are examined by the attending physician during the daily hours; weighed, and recorded by the nurse, and supplied with milk in bottles modified according to the formula required, or with milk and the directions for home modification. In the latter case the nurse follows up this instruction by visits to the home to ascertain if the methods are complied with. This milk is not given, but sold at a slightly reduced rate, the advice and care of the physicians and nurses being without charge.

A distinct influence has thus been produced on the death rate already, and what to my mind is of more importance—the mothers are carefully instructed in methods which will and which already do prevent sickness among the children, and which ought to result in a sturdier race in the coming generation.

The opportunity has arrived for each one of us of the medical profession to educate the laity under our control into a knowledge of and a demand for clean milk, into a knowledge of the proper care of the milk at the home and into the opportunity, if well to do, of fostering and caring for the clean milk stations which are to be used by those others of our clientele who have been less fortunate in this world's goods.

REMARKS ON SKIN GRAFTING.

By J. Emmons Briggs, M.D., Boston, Mass.

I should hesitate to present this rather trite subject for your consideration were it not for certain improvements made within the past year which have tended to simplify the procedure and at the same time ensure far better results than were possible by the older method.

I think we may well classify skin grafting among the great achievements of the past fifty years. Before the discovery of this comparatively simple measure, all extensive cases of loss of epidermis were treated by cleanliness, awaiting the time when nature should be able to close the defect by the very slow process of granulation and epidermization. In the pre-grafting days, the healing process was necessarily exceedingly slow; the frequent changing of dressings on extensive granulating areas caused the patient great suffering and distress, and the ultimate healing resulted in cicatricial contractions occasioning deformity or impairment of function. Reverdin, in 1871, established the possibility of closing extensive defects in the continuity of the skin by the implantation upon areas of granulation tissue, of small particles of epidermis, removed from healthy skin. He observed that these implantations were followed by the formation of islands of new epidermis, which gradually spread peripherally; also, if a number of such islands could be established, in a large area of granulation, that the epidermis would quite quickly coalesce and the period of wound healing be greatly shortened.

His method of procedure was to introduce a needle into the skin, lift up a tiny particle of epidermis with scissors or a knife, convey this detached piece of epidermis to the granulation area and leave it in contact with the fresh granulation tissue. This operation was comparatively simple, but in view of the fact that only a very small proportion of the grafts planted in this fashion could be relied upon to adhere, the operation became very tedious and trying to the patient; for hundreds of these tiny grafts had to be applied, while only a few successfully adhered.

Later experience has demonstrated that failure in Reverdin's method was not due to any fault in the grafts themselves, but, rather, to lack of proper preparation of the area which was to receive the new grafts. This method of grafting, as devised by Reverdin, is practiced today and is of very great assistance to the surgeon in closing small defects, greatly hastening the period of wound closure. It would be used even more extensively today were it not for a superior method which followed.

The Thiersch method was a step in advance of the Reverdin, inasmuch as the grafts were of large size, being in reality only about half the thickness of the normal skin, yet of sufficient size so that a large area of denuded surface could be covered at a single sitting.

The only disadvantage of this method consisted in the necessity of having the patient under a general anæsthetic. Thiersch laid great stress upon the preparation of the field which was to receive the new grafts; that it should be rendered aseptic, first, by the use of antiseptics and then prepared by soaking with a normal saline solution. These skin grafts were shaved off and were applied to the granulation tissue with edges slightly overlapping, as clapboards to a house, and when the whole wound was covered in this fashion, he recommended a gutta percha tissue, held in position by treating its edges with chloroform. Gauze was then moistened with normal saline solution, six-tenths of one per cent., and placed over the gutta percha tissue, and kept in a moist condition by repeated applications of the saline solution. This method of treatment was vastly superior to Reverdin's, inasmuch as a very extensive area could be grafted in a relatively short period of time, and if the area on which the new grafts were spread was in a proper condition to receive them, very rapid closure of the denuded area ensued.

The method as devised by Thiersch remained substantially as he described it for a number of years, the first departure being a dry method of treating the grafted area. All of us who have had any extensive experience with the Thiersch method of skin grafting have recognized certain defects and have been trying to obviate them. There are certain well-understood conditions which render skin grafting only partially successful, or even sometimes a complete failure. The first and most important of these is the transference of grafts to an area which is septic. This will inevitably be followed by a floating off of the grafts, by the accumulation of pus which underlies them. It may be possible at the first dressing in such a case to predict an entire failure. Other conditions tend to make the operation only partially successful. If oozing is not entirely controlled, blood accumulates beneath the grafts, lifting them from the granulation tissue. Large air bubbles between the granulation tissue and the under surface of the graft elevate it from the tissue beneath, preventing coaptation.

In grafting certain portions of the body, our greatest difficulty is experienced in preventing the freshly applied grafts from being

rubbed off. They may slide from the area where applied to healthy skin; or they may become rolled up, leaving areas of granulation exposed.

At the first dressing this will be apparent. Where these grafts have stuck, the results will be satisfactory, but the denuded areas will secrete a discharge detrimental to the vitality of the grafted area and the granulation tissue remaining between the grafts will proliferate very rapidly, preventing the spread of the new area of epidermization.

If we undertake to destroy these profuse granulations by cauterizing them with nitrate of silver, the caustic is likely to destroy the epidermis newly formed, as the result of grafting. If granulation tissue becomes too profuse, its destruction can be accomplished by trimming off to the level of the new epidermis formation, with a sharp knife, this being preferable to chemical cauterization. Any bleeding thus occasioned may be stopped by pressing the area firmly with gauze for a few moments.

In extensive skin grafted areas where the operation and after treatment have been in accordance with Thiersch's method, one frequently observes an area thus grafted and apparently doing well, showing a very serious retrograde change at the end of the first week from some apparently unrecognized cause. The vitality of the graft suffers at this late period and rapidly disappears, the new epidermis apparently undergoing a process of maceration.

I am convinced that this is due to a retention of discharge between the new epidermis and the gutta percha tissue overlying. This can to a great measure be obviated by fine perforations in the gutta percha tissue, which provide for an escape of discharge and the absorption of this upon overlying dry gauze.

There are in my opinion several reasons why grafting by the Thiersch method has proved more or less unsatisfactory.—To repeat, a septic area to which the grafts are applied, a sliding of the grafts upon this area, so they overlie each other or are displaced on to normal skin in the immediate vicinity, the accumulation of blood, serum or air bubbles between the granulation tissue and the overlying epidermis, and the maceration of the grafts at a later period, after they apparently have adhered. This is due to closely confined, non-pervious dressings, retaining pus, etc., with its chemical and bacteriological action upon the newly formed epidermis.

Fortunately, all of these conditions which militate against success can be overcome by improved technic, with the possible exception of rendering septic areas aseptic prior to grafting. I realize that this is a very difficult problem, especially in attempts to graft old extensive burns and ulcers, with great loss of tissue and suppurative base. In fact, I do not believe it is possible to clean up these very foul areas and apply the grafts at one sitting.

It is my custom in treating such cases to etherize my patient; remove all superfluous granulations with the curette and shave them off to a smooth base with a sharp knife; then very thoroughly scrub the area with a coarse brush and a one-half of

one per cent. formalin solution, and for the next two days I keep a compress of 1 to 4000 corrosive sublimate solution over the area. On the second or third day, remove all chemical antiseptics, apply compresses wet in normal saline solution, changing them frequently, or keeping them very moist. On the following morning, the compress wet in the saline solution is removed and the grafts are applied.

The advantage in this method of preparation lies in the fact that the wound is treated for a number of days with fairly strong chemical antiseptics, and at the time when operation is performed, the effect of these chemical antiseptics is neutralized by the saline solution.

When grafts are applied in this method, the area [illegible]t disturbed in any way, there is no bleeding to contend wi[illegible], and the surface by the previous preparation is perfectly smooth and in excellent condition to receive the new grafts. Even with the care thus exercised, it is impossible to be positive that an area is aseptic when the grafting operation is performed; for now and then, conditions arise immediately following operations which point very conclusively to sepsis. When this technic is followed, failure due to septic infection will rarely occur.

The prevention of the sliding of the grafts, leaving exposed granulation tissue, is a matter of technic. Grafts slide easily when friction is applied, being suspended in a liquid medium between a smooth granulation surface beneath and gutta percha above. The new method of treating grafts, which I shall soon describe, obviates this trouble almost completely. The accumulation of blood, serum or air bubbles between the granulation tissue and the overlying grafts is never troublesome in cases where the field has been thoroughly prepared.

The maceration of the new epidermis, the result of confinement of pus between graft and overlying gutta percha tissue, can readily be obviated by the method which I am about to describe.

I wish now to outline to you a mode of skin-grafting which I have practiced during the past year and a half with very satisfactory results. I have already told you of the method employed in the preparation of an old granulating area, so that it may be comparatively aseptic and ready to receive the graft. The location from which the Thiersch grafts are to be taken, usually the anterior aspect of the thigh, should be prepared on the night preceding the operation by thoroughly scrubbing with soap and water, but without violent friction, such as might be occasioned by the too vigorous use of a brush. A compress wet in normal saline solution is then applied over the whole anterior aspect of the leg and held in place by a bandage. On the morning of the operation, after the patient is anæsthetized, the bandages are removed; thin grafts are cut with a Mixter skin grafting apparatus. They are picked up upon tissue paper and immediately transferred to the denuded area. In laying these grafts upon this surface, it is well to overlap them a little, as well as to have them overlie the epi-

dermis on the peripheral border of the wound. After the surface is entirely covered by new grafts, a layer of tulle may be spread over all, or this may be omitted. It is then dusted over with a thin coating of Merck's alum compound. This very quickly dries on to the external surface of the epidermis, seals the edges of the grafts together, and prevents any tendency to slip.

The next step in the operation is the adjustment of a fine wire mesh or metal guard made of perforated tin, and shaped like a saucer, over this wound, convex surface upward. The edge of this tin splint is fastened to the skin with surgeon's adhesive straps, and it covers the wound like an inverted plate, its purpose being to protect the wound from any external violence and to protect any possibility of brushing the grafts from the location where they were carefully adjusted. This tin plate or splint having numerous perforations, facilitates evaporation and keeps the wound perfectly dry. Over this, a bandage made of one or two layers of cheesecloth may be applied, to hold it in position. The advantages claimed for this method of treatment lie in the facts that the grafts are never rolled up or displaced and never macerated by the retention of fluid beneath the gutta percha tissue. If the operation is perfectly successful, there ought to be no moisture during the period of healing. Should the least drop of fluid appear, a little more dusting powder is applied to absorb it. After four or five days, this metal splint may be removed and the wound left exposed to the air; in fact, I have treated many cases where it was impossible to adjust a protective splint, by leaving the wound exposed from the first. This method is very nicely adapted to cases of cancer of the breast, where flaps cannot be approximated and the space has to be filled in by Thiersch grafts. The wound above the skin grafting area should be dressed with gauze and securely strapped.

I have grafted quite a number of breast cases by this method, and the result has been uniformly successful. It does away entirely with frequent dressings with re-application of the gutta percha tissue. I feel that I have used this method a sufficient number of times to be justified in recommending it to you for your consideration and trial, believing it to be a very definite step in advance.

A THEORY OF COLDS.

By B. C. Woodbury, Jr., M. D., Portsmouth, N. H.

In a recent issue of the "*Gazette*," in an article entitled "Some Types of Colds Seen Recently," by Dr. C. H. Colgate, Jr., after outlining briefly the symptoms of a particularly baffling type of infection of grippal origin, involving in some cases the frontal sinus and antrum, the writer asks his colleagues for suggestions as to a possible remedy. The present writer personally holds to the belief that "colds" have not an exogenous origin but arise, quite on the contrary, from within the organism. Some years ago, while a student of medicine, we recall being asked as a class to write a

brief dissertation on the subject of colds, their origin, cause, communication, et cetera. Not having at that time any clear conception of the true nature of such a catarrhal condition, the nearest attempt at anything like a sane opinion on the subject was our belief that a cold originates through an effort on the part of nature to equalize the circulation after sudden chilling of the skin surface, with checking of the perspiration. This theory has undoubtedly held credence with many for long, but, however much we may theorize, we are still forced to admit that, simple as it seems, but little of etiological value has ever been adduced as to a satisfactory explanation of the origin of the "common cold." Undoubtedly there is an associated bacteriological factor, either in some of the various strains of the influenza bacillus, or, as has also been observed, there are other causes such as the pneumococcus and even some of the more violent pyogenic bacteria; likewise the influenza bacillus may be the causative factor in grippal pneumonia, intestinal, pleural and other inflammations.

If we acknowledge ourselves heartily in accord with the infectiousness and contagiousness of colds, we can even then attribute to the bacterium only secondary importance as a causative factor, the precedent being given to the underlying condition, the susceptibility of the organism. This Hahnemann well defined as a disturbance of the organism on the dynamic plane, manifesting itself in its *clearly expressed outward image*. From this standpoint, we place the common cold, clearly a catarrhal process, in the category of those (autocratic) dynamic or protective actions of the organism. We must, therefore, seek its origin within the organism. Knowing from practical observation and simple experiment that overeating of suitable, or requisite amounts even, of improper foods will congest the liver and intestines, and throw out of order the functions of others of the secreting glands, it will be less difficult to understand such processes if we reason thus: that the cold or other catarrhal condition is but the outwardly expressed image of an internal congestion, which being projected to the peripheral orifices of the body, thus automatically as it were protects or conserves the vital equilibrium. Thus the common cold or any catarrhal process acts as a healing crisis, thereby relieving the internal disorder. It is a well known fact that in an attack of catarrhal jaundice there is a very noticeable and characteristic discoloration of the skin and mucous membranes, particularly those of the conjunctival and buccal linings. With the above disturbances there is some obstruction to the passage of bile from the liver and its glands into the intestines, as the result of which it is absorbed into the smaller branches of the hepatic vein and carried into the general circulation. The symptoms of this affection are yellowness of skin and mucous membranes, pruritus and ecchymoses, slowing of both heart and respiration, and discoloration of the bodily discharges. This characteristic color is known to be due to absorption of the biliary pigments. The pigments of human bile are the yellow, or bilirubin, and a green coloring matter called

biliverdin; and according to Kirk, when the bile has been a long time in the gall-bladder, another biliprasin may also be detected. It is also claimed that there seems to be a very close relationship between the coloring matter of the blood, the hæmoglobin and that of the bile, also between these, and the urobilin of the urine, and the stercobilin of the fæces, and "it is probable they are all of them varieties of the same pigment, or derived from the same source." "In jaundice the fæces are light colored and highly offensive, there is constipation, the heart beats slowly, and from the presence of bile salts as well as bile pigment in the blood, the red blood corpuscles may be in part dissolved."

In an ordinary attack of coryza, or "cold in the head," the attack is usually ushered in by dryness of nose and throat, followed by sneezing, and watery and usually excoriating nasal discharge, associated with more or less general malaise, headache and aching of muscles. Common observation has proven abundantly that in addition to sudden chilling of an overheated body, fatigue and exposure to cold and dampness, or contagion during an epidemic, etc., there are many so-called colds which owe their origin to sluggishness of the liver and intestines, and a general catarrhal state of the mucous membranes, due unquestionably to excess of fats, sweets and starchy food, or overeating in general. As evidence of the generally accepted belief as to the toxic origin of colds, we need but recall that to the ordinary person, such a condition is an evidence of an overloaded intestine or liver, and his erroneous treatment consists in a liberal dose of physic.

It is unfortunate just at this time that someone has not come forward to substantiate this theory by the demonstration that in the nasal and pharyngeal discharges of the common cold there may be found by appropriate tests, in addition to bacteria, if not bilirubin or even its antecedent hydrobilirubin, at all events, coloring matters from the blood stream which may be their ultimate equivalents. It is well known that the ordinary pigments during diseased states are found circulating freely in the blood stream, that perspiration is the carrier of urea, and other extractives, organic acids, salts and neutral fats; it is known, furthermore, that iodine and other substances applied endermically reappear in a short time in the urine, and in some instances in other of the bodily excretions. Why then, granted that we have to deal with a state of constipation and consequent auto-intoxication, which is generally an accompanying symptom of a cold, may we not in this case have to do with a process of substitution by which nature throws the work of the kidneys, liver and intestines upon the more active mucous membranes of the respiratory tract? Certainly a reasonable theory, if not demonstrable readily by laboratory experiment. If we accept the belief that the various pigments of the bile, urine and intestines have a common origin, we shall have taken our first step toward the formulation of a working basis for our theory. A hint of the above the writer first received from the teachings and beliefs of his predecessor, the late Dr. F. L. Benedict, to whom

he feels most grateful. By him such conditions were given the significant name of "liver colds." That the nasal passages may act as a dupurative organ is evidenced by the well known occurrence of epistaxis, in vicarious menstruation, the discharge from the nose in fevers and other septic processes. As proof of the relationship between bile or blood pigments and the varying shades of color in the nasal discharges, we may recall that many persons during an attack of nasal catarrh experience this variation in the shading of the discharges from day to day; from the thin and watery, whitish discharge, to the yellow or bloody mucopurulent, or to the greenish or brownish, this latter being the typical "bilious" discharge. Similarly, the color of the skin of the face assumes the same characteristic appearance, and may pass through similar varieties of color changes.

If we consult our Boenninghausen, we shall find that the nasal discharge may be: "acrid, bloody, flocculent, gray, green, offensive, yellow;" and the odor from the nose may be "sweetish, or even urinous," and furthermore, illusions of smell may be "agreeable, bituminous, blood, burnt, earthy, foul, of old catarrh, of pus, sour, sweetish, sulphurous." Such study from the clinical standpoint alone will suggest to us the idea that the action of nature in self-elimination is from within outward; therefore, such salutary discharges should not be suppressed, but should on the contrary be allowed to continue unchecked by external applications, until the proper remedial measures can by a similar action from *within*, direct the vital reaction gently into channels of health.

As a possible helpful suggestion, the writer would say that in the spring of 1911, during a grippal epidemic, in one case seen by him, after a stormy twenty-four hours of pain, fever, vomiting, and coryza, there developed a frontal sinus condition similar to that described by Dr. Colgate. The pain, which was sharp and stitching, located over the left frontal eminence, was intensified from motion, especially walking, rising, or stooping; the discharge was at first *bloody*, then *very stringy, profuse, and finally most offensive.* No douching was allowed, but capsicum in the third dilution was given once in two hours, which in a very short time relieved the discharge, lessened the pain, which was entirely removed in about three days' time by the subsequent use of natrum mur. 3x and 30th.

The writer has never before used capsicum for such a condition but it was suggested by the stringy discharge, and sharp, burning pains, aggravated by motion. It has been highly recommended in infection of the mastoid cells upon similar indications. Its materia medica is as follows: "Diminished acuteness of smell. Nosebleed in morning in bed. Bloody mucous discharge, from nose, when coughing. Collection of thick mucus in nose and throat. Stoppage of nose. Coryza and influenza. Contractive, jerking pains in left side of nose and above left eye. Headache as if skull were bruised, on moving head and on walking. Constant pressive headache, above root of nose, with stitches through

ear and over eyes. Violent, deeply-penetrating stitches in vertex. Cough, with headache, as if head would fly to pieces. Drawing, tearing pain in right frontal bone." The special indication for natrum mur. in this case was the characteristic aggravation of all the symptoms from nine to ten a. m. As a further proof of the origin of liver colds, we may cite the fact that this type of affection very often finds its similimum in such liver remedies as hydrastis, bryonia, mercurius, kali mur., and natrum sulph.

For what may be termed the stomach cold, we should not forget nux vomica, so often guided to it by the "stuffy catarrh," with fluent discharge during the day, but stopped up at night; antimonium tart. (which according to Dr. John F. Gray was considered almost specific in the first stage of influenza); ipecac, if with a disordered stomach there is a suffocative bronchial condition; and other remedies as indicated, such as arsenicum, pulsatilla, kali bich., etc.

The nervous cold finds its nearest similimum in gelsemium, or aconite, eupatorium, phosphorus, kali phos., or hyoscyamus.

The intestinal type is best indicated in the provings of such remedies as nux and bryonia, if constipation exist, or mercurius or arsenicum, sulphur, or natrum sulph., if diarrhea is present. For the irritative symptoms such as general toxic pains, aconite, bryonia, eupatorium perf., or purp. (in some cases), rhus tox., phosphorus and for the purely catarrhal manifestations, allium cepa, arsenicum, arsenicum iod., euphrasia, natrum mur., æsculus, mur., pulsatilla, kali bi., sinapis nig., merc. viv., wyethia, æsculus, and quillaia.

Nor do we find that nature is capable of expressing herself always by symptoms which have the correct topographical or anatomical locations; hence the proper understanding of reflex symptoms, and the recognition and determination of the symptom-totality, so well known in homœopathic prescribing. If the theory we have outlined be a correct one, epidemic colds do not depend altogether upon atmospheric and seasonal changes, so much as upon internal conditions of the patient, and their underlying constitutional states.

In regard to the lobelia syph., or cerulea, the remedy found by Dr. Colgate to be the similimum, the writer has never employed it in such conditions, but it undoubtedly would be found most efficacious when indicated. An excellent report of the provings of this remedy by Drs. W. Williamson and J. Jeans, also clinical cases by C. Neidhard, was given by Dr. Hering in the Hahnemannian Monthly, Vol. VI, page 20, and later incorporated into the Guiding Symptoms.

UNUSUAL CASE OF TYPHOID FEVER.

By J. Arnold Rockwell, Jr., M.D., Cambridge, Mass.

The following case is offered as presenting certain unusual and interesting features:

The patient, R. McG., an unmarried woman of twenty, was admitted to the Massachusetts Homœopathic Hospital, service of Doctors Percy and Rockwell, October 3, 1911. Her family history was irrelevant, her father and mother having died of tuberculosis, and two brothers and sisters in infancy, cause unknown. Her own past history was not especially noteworthy, as it included no acute illnesses or menstrual irregularities. The principal abnormal condition mentioned was that of occasional attacks of forcible vomiting of food, not preceded by nausea, the last attack having occurred October 1. Until September 26 she had been in her usual health.

On the night of September 26 a stiff neck developed, the stiffness not being noticeable, however, the next day; but on the twenty-eighth she began to have diarrhea, three or four painless movements in the morning, two in the night, and very slight occasional tenesmus. These loose movements continued, and October 2 began to be accompanied by pain; character of the stools unknown. Epistaxis occurred September 28 and 29. A slight cough developed October 2.

The patient's temperature on admission was 102.6 degrees, pulse 140, respiration 30. Physical examination revealed a well-developed, well-nourished body; a few papules on the face; teeth and gums in good condition, with some sordes on the former; tongue thickly coated white, with red edges; breath foul; throat negative.

The apex of the heart was found in the fifth space, mid-clavicular line. The heart sounds were normal, no murmurs. Prolonged expiration and jerky inspiration were observed over the left lung posteriorly, at the apex and just below the scapula, and in the lower right lobe slight dullness was noted.

Examination of the abdomen disclosed one rose spot below and to the left of the umbilicus; some gurgling in the right iliac fossa and in the left hypochondrium; no sensitiveness; slight tympany. The level of the abdomen was about that of the thorax. There was no sensitiveness in the region of the liver, which was one-half inch below the costal border in the mid-clavicular line. The spleen was not palpable, nor the right kidney. Eye reflexes were normal; no Kernig's sign.

The blood count gave leucocytes 8000; neutrophiles 73 per cent.; Widal suspicious. The twenty-four hour urine was 13 ounces; specific gravity 1016; total solids 14.1 grams; urea 10.4 grams; chlorine 1.9 grams; phosphoric acid .4; slight trace of albumen; no sugar. Sediment: acid ammonium urates; pus cells; bacteria, and squamous cells.

Typhoid precautions were taken, and a restricted diet of milk,

malted milk, rice and oatmeal jelly, junket, and Mellin's Food prescribed, together with plenty of water.

The loose stools continued, becoming involuntary, blood being first noticed in them October 10, the greatest amount being seen the next day, and constant oozing of blood being plainly evident thereafter. The patient was quite irrational at night, otherwise rather difficult to rouse. The temperature continued high. For a week prior to October 14, this case was placed on the dangerous list, and recovery considered extremely improbable.

At 3.30 P. M., October 14, the patient was suddenly seized with paroxysmal, epigastric pain, exceedingly sharp in character, forcing her to cry out. The rectal temperature at this hour was 102.1 degrees, and at 6 P. M., 103.6 degrees; pulse 120; respiration 32. The attacks of pain continuing, with increasing abdominal tenderness at first epigastric, later noticeably on the right side in the hypochondriac and iliac regions, the patient was seen by Doctors Wm. F. Wesselhoeft and Clarence Crane. After careful consideration a diagnosis of perforation was made, operation advised and accepted, and the patient taken to the operating room at 7.30 P. M., where laparotomy was performed by Dr. Herbert D. Boyd.

The entry in the operating book, as dictated by Dr. Boyd, reads as follows: "Under ether a median incision was made followed by exploration of the abdominal cavity . . . . . We were unable to find any rupture (of the intestines), but a large number of ulcerated patches were found in ileum and mesentery, and the ileum was studded with large glands. The gall bladder was found greatly distended, and, under continuous pressure, we were able to empty it. Nothing further of interest was found."

The wound having been closed and dressed, the patient was returned from the operating room at 9.15 P. M., with a pulse of 120. There was much pain during the night, and a morphia suppository, gr. 1-4, was administered. The abdominal distention and pain were very considerable the next day, October 15, and a one-quart saline enema was given every six hours. The pulse varied from 108 to 150, and at times was very difficult to count. Some flatus was expelled by mouth, but none per rectum. No blood was passed.

On the sixteenth, a large amount of flatus was expelled by mouth. Great abdominal distress and pain continuing, the saline enemata were discontinued, and turpentine enemata substituted at three-hour intervals, the first two affording no relief, but the third occasioning the expulsion of a great deal of flatus, with corresponding relief of the distention and pain.

On October 18, 20 and 22, the patient had a short chill, after which the temperature shot up to 106 degrees, subsiding in a short time to that prior to the chill. The lungs showed some hypostatic congestion, but not enough to account for this temperature.

On October 31, the patient complained of earache, and Dr. F. W. Colburn, having found a large old perforation in the mem-

brana tympani, and some sensitiveness over the mastoid, an ice bag was applied for several days, with intervals of rest, and this, practically the only complication, eventually cleared up.

After the memorable fourteenth of October, the day of the operation, no blood was seen in the stools.

Homœopathic treatment was, of course, resorted to immediately on the patient's admission to the Hospital, the remedies prescribed during the progress of the case including bryonia, baptisia, mercurius dulc., phosphoric acid, acetic acid, nitric acid, and capsicum.

Convalescence proceeding satisfactorily, on November 11 the diet was increased to soft boiled eggs and "meat to chew," and on the sixteenth the patient was up in a wheel chair, and was finally discharged "Recovered," December 7.

THE FUTURE OF HOMŒOPATHY.

By Frank C. Walker, M.D., Nantucket, Mass.

It would seem that a little time spent in the contemplation of the future of Homœopathy would not be wasted. Not that we have any doubt of its perpetuity. That is assured. But because recent developments in the opposing school are more clearly defining the lines of its development. Its present status has been very ably portrayed by Dr. G. Forrest Martin in a recent address before the Massachusetts Homœopathic Medical Society, in these words: "The almost panic which seized upon our homœopathic profession a few years ago, when the campaign of abuse and ridicule gave way to the carefully planned substitute of benevolent assimilation, has reached its zenith and is upon the wane. Propagandist work is in the air. The whole atmosphere of our meetings and the character of the discussions have taken on an optimistic tone. The school is alive from California to Maine." Certainly herein is ground for the most hearty felicitations, but an inquiry into the cause of this enthusiasm is surely in place. To our mind it arises primarily from the emphasis that has been placed during the last two years on the fact that one hundred years have passed since Hahnemann gave to the world that book, incomparable from a therapeutic standpoint, "The Organon of the Art of Healing," and during that one hundred years an increasing number of physicians have derived professional sustenance from it, and an increasing number of patients have looked to those physicians for professional care. So that now, at the beginning of a new century of its influence, we are confronted by the spectacle of over 12,000 educated physicians who apply its tenets, and hundreds of thousands of patients who adhere to its practice. But what has occurred in that hundred years in the dominant school of medicine? Let us see. At varied intervals during that century greater or lesser lights have appeared who have most severely arraigned the condition of so-called "scientific medicine" in their day and generation. Some have expressed hope and some despair, that medi-

cine would ever be placed on a scientific basis. Whether these hopes have been realized we may gather from quotations from prominent figures of the present day. We would naturally expect that if so-called "scientific medicine" had made the advances that some of its votaries would have us believe, its standing in court, where the truth or falsity of prevalent opinions are most thoroughly threshed out, would be improved. Is this the case? In the latter part of the year 1910, Dr. Lincoln R. Graham, in a paper before the Yorkville Medical Society on "The Physician in Court," made this statement: "There is no place where the physician receives such slight respect, and frequently such marked disrespect, as on the witness stand. Nor in truth can it be said that this condition is entirely unmerited. For as a rule we physicians have resigned ourselves to the field of probabilities, while in the courts we are transferred into the field of facts and certainties."

Now any physician who, on the witness stand, resigns himself to probabilities, rather than to facts and certainties, does so from choice or necessity. If he does so from choice, he merits all the contempt that the court can bestow upon him. If he does so from necessity, what becomes of the much-vaunted progress in medicine which the lay press would have us believe has taken place in the last few years? But that he is driven to this position from necessity we are led to believe by some other utterances of our author's colleagues.

On the 22nd day of May, 1911, Dr. Otto L. Mulet, in an address before the American Pharmaceutical League on "Therapeutic Nihilism," said "that the therapeutic nihilism that is now, and has been for some time, rampant in the ranks of the profession, is with the majority of its confessors more a matter of fashion than the result of serious reflection and study. To follow one or another who has gained eminence in medicine too many think is the proper thing. Too often it means that such a follower is but one of a flock of sheep following a bell wether. This insensate practice not only stifles originality of thought, but, what is worse, it has fostered laziness in the study of materia medica, pharmacology and therapeutics." The main point brought out in this statement is that therapeutic nihilism is rampant in the dominant school of medicine today, but the question very naturally arises if this "insensate practice" of "following a leader" and which our author declares is a fashion, is not rather a search for an interpreter of the incoherences of the old school materia medica, pharmacology and therapeutics than an outcome of laziness in their study.

That these opinions are not alone entertained by Dr. Mulet, we are inclined to infer from an address by Dr. Ludwig Koempel before the Society of Bethany Deaconesses Hospital, on March 28, 1911, subject: "The Status of Pathology in the Medical Science of Modern Times." He said: "Surgery and therapeutics have in the last decade been practically at a standstill. If my observations are correct, certainly nothing new in these branches has been brought out during the last decade which could be called

startling or epoch making." And he adds this remark to the statement that "although well aware of the cynical indifference of the modern physician towards the effort of the pathologist to unravel the mysteries of disease processes, by means of chemical test and the microscope, I deem it my duty in a few words to exhort the medical brethren to a close watch of the progress of pathology, as in that field I expect within the next few years to see discoveries or inventions to come forth which may in a stupendous measure revolutionize the practice of medicine of the near future." But enough of these quotations. They serve only one purpose, and that is to emphasize the lamentably chaotic state of the so-called "scientific medicine" of today, and the absence of any principles by which it is likely to become extricated from this confusion. Of course this also makes a particularly dark background on which to depict the future of Homœopathy.

That some of the dominant school have received some light, proof is continually accumulating. Much has been made in current homœopathic literature of the regrets recently expressed by Prof. Gimeno, of Madrid, for having incorporated in his work on therapeutics, twenty-five years ago, so much that was condemnatory of Hahnemann and his disciples. Much has also been made of the endorsement by Prof. Von Behring of the word "Homœopathy" as most explanatory of some recent discoveries in therapeutics. But we feel that due prominence has not been given to some confessions by Dr. H. A. Hare, on our own side of the water.

This eminent professor of materia medica has few peers in this country or abroad. On the fly leaf of the sixth edition of his work on "Practical Therapeutics" we find this injunction: "When called to guide a patient through an illness the physician should be constantly a watchman, and a therapeutist only when necessary." By implication this injunction attaches the greatest value to the cultivation of the powers of observation, and to caution in the application of the prevalent therapeutics. Assuming that he has incorporated these principles in his own practice, we find this statement in his chapter on "Acute Articular Rheumatism." "No better example of the fact that Therapeutics is in advance of Pathology can be adduced than the disease known as rheumatism. The therapeutist cannot tell how he cures the condition designated by that name, simply because the pathologist cannot tell what the cause of the disease is, and when this information is forthcoming from the one side, an explanation will be immediately given by the other. This being the case we must devote ourselves to the study of pure empiricism, and not to logical pharmacology." Without dwelling upon the pertinent question of the use of pursuing too sedulously, the study of pathology or the theoretical side of medicine, when therapeutics, the practical side, can advance beyond it, we would say that if any man of Dr. Hare's school has made this significant observation, we have failed to note it. The absence of any allusion in Dr. Hare's work to either methods, rules or laws in medicine gives particular prominence to a remark

in the introduction, namely: "Homœopathy depends upon more than one reason in its existence. If infinitesimal doses are given, the patient is satisfied that he is receiving medicine; and nature often produces her most rapid cure when left alone. Again, the entire basis of Homœopathic therapeutics rests, not upon the study of the cause of the diseases, but upon the symptoms that constantly present themselves. As a result of this, so many minor symptoms are relieved that the patient's comfort is assured, and doubtless in many instances serious disorders are discovered which may otherwise be cast aside or go unseen. No detail should be too small to attract the attention of the physician, and he who exercises care in detail must reap reward in large measure." It is not necessary to point out to the intelligent reader all that is implied in this quotation. As we review all these significant utterances of old-school authorities, we feel justified in believing that no matter how emphatically some homœopaths may declare that their school will be ultimately submerged by the dominant one; no matter how strongly some of the old school may declare that they have appropriated all that is of worth in Homœopathy, the homœopath will not lose his identity. One hundred years of adherence to principles of Homœopathy have so indelibly stamped its effects on the minds of millions of intelligent adherents that they will demand the homœopathic practitioner.

The younger generation of medical students discerns this. Witness the fact that upward of two thousand less students attended allopathic medical schools last year than the year before, while a few more attended the homœopathic schools. The homœopathist will more and more appreciate the fact that for success in therapeutics he is not dependent on too great refinements in diagnosis. Of course he should be well equipped in this important branch, but when he realizes that under the best conditions in a series of one thousand autopsies in a large hospital, forty per cent. of the ante-mortem diagnoses were proved to be incorrect, he will be more enthusiastic in curing his patients than naming the diseases. If he makes excursions into mental therapy, he will come back more impressed with the emphasis that its exponents place on the unity of the human organism than by the luxuriance of their vocabulary. And if he finds that the "mortal mind" of the mental therapeutist and the "vital force" of Hahnemann are not so distantly related as he had thought, he will congratulate himself that regardless of the truth or falsity of these conceptions, they have not so far required frequent revision. If he becomes unusually enthusiastic in surgery, he will recall the fact that a prominent homœopathic surgeon said within a few years that nothing new had developed in surgery during the last two years, and that such progress as had been made was in his judgment as to which of several operations to choose to produce a certain result. And an equally prominent old school surgeon predicted that in a comparatively short time the knife would be displaced by internal therapeutics for cancer and other diseases. Then, after having

gone the round of therapeutic vagaries, he will be in a position to appreciate the importance which Dr. Hare attaches to the observation of the minutest symptoms, his admission that it is possible to obliterate them before they array themselves into a pathological picture, and his endorsement, even if negative, of the infinitesimal dose. The young homœopathist will more and more learn that the bulk of the old-school literature, rather than assisting him in more perfectly treating the multitudinous conditions which he daily meets, is made up of exploitations of unusual cases, under conditions which he can hardly hope to duplicate unless he is connected with some metropolitan hospital. And he will certainly increase his own proficiency if he more frequently consults his own materia medica and acquaints himself with use of the repertory. That he is doing this, the enthusiasm that has pervaded the more recent state and national conventions would seem to indicate.

A CASE ILLUSTRATING HOMŒOPATHIC PRESCRIBING.

By W. A. Dewey, M. D., University of Michigan, Ann Arbor, Mich.

Diagnosis.

W. H. S., aged 30, has had for six months a right-sided facial pain coming in paroxysms. The pain is very severe and involves the infra-orbital branch of the trigeminus nerve. The paroxysms of pain begin in the upper lip and suddenly. He can ascribe no cause therefor. The face is hot, and he says the pains are burning and darting. He has been to many physicians and gets relief only from opiates. He has recently been advised by a surgeon to have the nerve excised as a last resort.

We have here an intense paroxysmal burning and darting pain confined chiefly to a single nerve trunk, the face is sensitive only during the attacks of pain. There are times when he has no pain. It is on one side of the face.

It is therefore not a *neuritis*, for when he has no pain the parts are not sensitive and the nerve is not swollen; the pain of neuritis is constant, though it may have times when it is worse. From the length of time it has lasted, were it a neuritis there would either be a paralysis of the parts, an atrophy, or an anæsthesia. Neuritis is more apt to be acute. In this case it is a chronic condition, the pain has remissions during which there is no sensitiveness.

Facial pain is found in *hysteria*, but here the affection is never confined to one nerve, it is more apt to be confined to the entire half of the body, and this patient has no other evidences of hysteria, so it is not that affection.

Nor is it *toothache*. It has lasted six months, and even if of the neuralgic type it could easily be localized in the dental nerve.

It is a case of *facial neuralgia* with all its manifestations and it cannot possibly be anything else, and as to the cause the history

so far gives nothing positive, nor is the cause discoverable by physical examination.

Treatment.

From the case as taken we have only the following points which are of use in selecting the remedy:

1. Pains right-sided.
2. Starts in upper lip.
3. Pains darting.
4. Pains burning.

This is all the history taken for the purposes of diagnosis reveals, and it is insufficient upon which to base a homœopathic prescription. If prescribed on above, it is really prescribing on a diagnosis, with no individualization whatever and consequently not homœopathic.

Upon interrogating the patient further we find the following symptoms which do not aid in the diagnosis at all, but which are essential in the prescription:

5. Pain aggravated by warmth of room, when coming in from cold.
6. Drinking cold water brings on the pain.
7. Pain always worse in damp or wet weather.
8. Pain worse in the day time, disappearing at night.
9. Any change in the weather brings on the pain.
10. Pain aggravated by cold, in general relieved by heat.
11. Pain worse in windy weather.
12. Pain worse from jarring the body.
13. Pain worse from pressure.
14. Patient swarthy, bilious in temperament.
15. Pain causes lachrymation on painful side.

Here, then, are all the symptoms obtainable from both the diagnostic and symptomatic side, and we will assume that these are the *totality*. Let us now prescribe on this totality of the symptoms.

We should take first the most peculiar symptoms and see what drugs correspond to them. A peculiar symptom is that the pain disappears at night, and the next most peculiar manifestation is the influence of weather on the pains. There seems to be a general aggravation from wet, windy and changeable weather, though he is worse when he comes into a warm room from the cold air, which we may interpret as a change. Let us take first, symptom 8:

8. Pain worse in the day time, disappears at night. This means that resting quietly in bed relieves.

Turning to the repertory we find that a large number of remedies have this symptom in a greater or less degree. Guided by our general knowledge of materia medica and the relative rank of these remedies as given by the repertory, we are justified in choosing therefrom the following:

Bry., Nux v., Squills, Nux m., Ars., Rhus., Nitric ac., Strontium, Phos., Sil., Caust., Spongia, Lyc.. Puls., Sulph., Coloc., Bell.

As this is the peculiar symptom, the remedy must be among

these or at least among those having that symptom. Let us now take symptom 9:—

9. Any change of weather brings on the pain. Eliminating from the foregoing we have the following:—

Nux v., Nux m., Ars., Rhus., Nitr. ac., Strontium, Phos., Sil., Caust., Spongia, Lyc., Puls., Sulph.

This narrows the choice somewhat. Let us now take

7. Pain worse in damp or wet weather. Continuing to eliminate, Nux v., Nux m., Rhus., Nitr. ac., Stront., Phos., Lyc., Puls., Sulph.

Thus we have eliminated Ars., Sil., Caust., and Spongia. Let us now take symptom

10. Pain relieved by heat, aggravated by cold. This refers to applications, and we find that all our drugs of symptom 7 have this symptom.

6. Aggravation by drinking cold water, a somewhat peculiar state.

This leaves us only the following:

Rhus., Sulphur., Nux m., Lyc., Nux v., Puls.

12. Pain worse, jarring the body.

Rhus., Sulphur., Nux m., Nux v., Puls.

This eliminates Lycopodium

All these drugs have symptom 11, pain worse in windy weather, for this symptom is simply a variant of the general climatic aggravation.

There remain symptoms 1, 2, 3, 4, 5, 13, 14 and 15, none of which are as important as the ones given, and with the exception of symptom 14 all of these five drugs have them. Symptom 14 relates to the temperament of the patient. However, all these drugs do not have these symptoms in an equal degree. Taking the ones exclusive of the first four which are purely diagnostic, we find that we can eliminate three of them, namely Nux m., Sulphur and Puls., which leaves but two for consideration, Rhus and Nux Vomica.

Let us now briefly review the values of these two remedies in all of the fifteen symptoms, including those which are merely diagnostic but which it is desirable to include.

This shows us that Rhus has *eight* of these symptoms in the highest degree as characteristic while Nux vomica has but *five* that are characteristic in the highest degree and as these symptoms that Rhus has in the highest degree are the very ones which are characteristic of the patient's idiosyncracies such as the weather modalities and relief by heat, the choice falls directly upon that remedy.

Result of Treatment.

Rhus 30th was prescribed, a dose four times a day. Patient experienced almost immediate relief and within a week's time his neuralgia had disappeared completely. He was seen several months later, and although he had been exposed to all sorts of weather there was no return of the trouble.

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M. D.

Case 1-C.—Diagnosis: Pneumonia.

This case was under the supervision of Dr. Frederick B. Percy, who has kindly suggested the following discussion:—

The symptoms of this case, together with the charts, point so readily to the diagnosis that regarded as a picture puzzle it is discouragingly easy. However, there were certain points on the therapeutic side which seemed of sufficient interest to warrant its report.

The infectious nature was evidenced by the irregular course and still more by a clear history of exposure to a case previously existing in the house.

The first of the course was not stormy but was long drawn out, worrisome and suggested a considerable secondary toxæmia or, as we would have said but a little while ago, a low resistance to the infection.

The patient was in an apartment where no sun reaches at this time of the year. Nothing is of more importance in the treatment of pneumonia than sunshine and good ventilation.

This led to a search for different environment as of possible benefit. Then the whole picture became suddenly intensified and a new area of obscure respiration was found at the base of the opposite lung, "then was held a council straight, brief and bitter the debate." It was decided that the only hope lay in the free use of stimulants, and whiskey was given freely as also champagne. Also a stock vaccine of pneumococcus was administered. The remedy prescribed by Dr. Frederick B. Percy, who managed the case, was iodide of antimony 2x every two hours. The results are shown by the chart and save for a rather protracted convalescence there has been good recovery. The nephritis, which appeared with the second rise of temperature, abated of its own accord.

Case 2-C.—For Diagnosis:

Miss M. N., age 57. Comes of an old New England family. Paternal grandfather was a minister. Father was a seafaring man, large and strong, who died of consumption at 40 after a four years illness. Mother died at 80 of paralysis after having had three or four "strokes." She was a healthy, vigorous woman and had had nine children, of whom four died of dysentery in childhood and one, a son, of apoplexy at 62.

The patient has never been strong but otherwise resembles her mother. When twelve years old she fell and hurt her spine and was confined to her bed for over a year. Had typhoid fever. She has always felt worse in hot weather and has been subject for some years to attacks of distress in occipit and gassy dyspepsia. Has had much neuralgia. Her sister says that when she felt well she was full of life and temperamentally happy, "not nervous or hysterical."

Present illness came on suddenly last Thanksgiving day. She overworked to get her house in order before leaving it for a short visit. Helped get Thanksgiving dinner and ate heartily. At close of meal patient had a dizzy spell and had to lie down. Told the doctor she thought she had had a "shock," and got restless and excited, but at this time had no paralysis. Later the excitement and mild delirium was interspersed by periods of stupor and it was found that she could not stand. At first it was thought that this might be hysterical because of normal intervals and because of her attempts to do things when she thought no one was looking. (?) Three weeks after onset there had been much improvement. Then suddenly her left hand became cold and blue, the pulse and respiration got very weak and she sank into unconsciousness, with every appearance of impending dissolution. This state lasted four days, at the end of which she rallied a little and uttered some articulate sounds, but speech was thick and incoherent. She was very restless and thrashed about so with the right leg and arm, that there were many abrasions on foot, ankle, knee and hand. She scratched herself so with right hand that the flesh was bleeding at many points, and a muff had to be used. But she could not move the left side at all voluntarily though the arm sometimes jerked about. The pupils were equal and of medium size. When the examiner's finger was brought close to the left eye there was no winking reflex, but this was present in the right eye. When the eyes were closed the lids of the right were approximated, but there was lagopthalmus on the left with a fissure an eighth of an inch. The tongue was heavily coated, brown and dry, and lay towards the right cheek (there was not enough intelligence to obey request to protrude it). Knee jerks were both present and the left big toe extended when the sole of the foot was scratched; not so with the right. Several small deep bed sores developed about the sacrum and right buttock. The bowels were constipated, and the urine had to be taken by catheter.

Uranalysis: a cloudy, light yellow specimen; specific gravity 1010; acid; no albumen; no sugar; urea 0.4 per cent. No casts but some pus and myriads of baccilli urinarious.

The heart sounds are feeble and distant, the second aortic metallic, but no murmur or enlargement could be detected. Abdomen and chest negative.

What is the diagnosis and from what must it be differentiated?

APPLIED HYDROTHERAPY.

By Barbara T. Ring, M. D., Arlington Heights, Mass.

Since Hydrotherapy as a subject appears in the curriculum of only one or two of our medical schools we can truly say that from the days of Naaman the Syrian to the present age it has suffered from neglect. Within the past ten years various hydrotherapeutic measures have come into general use, not only for nervous and mental diseases, but also for toxic states, fevers and

general conditions. In view of this fact the general practitioner has greater need than ever of a knowledge of procedures which can be applied in the homes of his patients. In institutions where there is installed a complete equipment for applying hydrotherapy and where nurses are instructed in the necessary technic it is not an arduous task to have prescriptions carried out with good results. In the home, however, it is difficult, and my purpose in this paper is to outline briefly the essential principles and the technic of a few applications which are adapted to domestic practice with practically no equipment.

History.

Water treatment is an old story, and different versions have been given by many men. Hippocrates was the first to dilate upon it, and the first to apply it in diseases with skill and judgment; and he insisted that cold stimulates and warmth relaxes. Representative men, Asclepiades, the physician of Cicero; Celsus, the medical adviser of Ovid and Fabius Maximus; Floyer, a learned English physician; Theden, the body physician of Frederick the Great, were all advocates of water treatment. Hahn was so enthusiastic that he offered a prize for the best treatise on the action of cold water in fever. The prize was won by Professor Froelich, physician to the Austrian Emperor. Professor Winternitz, who now occupies the chair of hydrotherapy in Vienna University, tried to make this remedial agent the common property of the medical profession for half a century, but not until the Priest Kneipp expounded his nature cure, and acquired a large following, did German doctors listen to his instruction.

The failure of hydrotherapy to obtain universal adoption has been due to the lack of scientific knowledge on the part of the physicians and to their careless methods of prescribing. Hahnemann, the founder of Homœopathy, wrote: "If there be a universally useful remedy, water must be the one." After describing his method of treating old ulcers of the leg by cold foot and general baths, he dilated judiciously upon the exactness of the application. "The degree of temperature of each bath and the movement in it must be adapted to the improvement in the strength. The weakest body may thus reach the strongest bath if the exact prescription of the doctor be followed with punctual obedience. I have never ceased to wonder how our great physicians could be so negligent in the prescription of the cold bath. They order half baths or full baths, morning and evening, and this is their idea of a prescription. Of the degree of cold, the duration of the bath, and other indispensable points, not a word. Surprise at the frequently reported ill effects of such cold baths must cease when these mutilated, inexact, three-syllabled prescriptions produce results opposite to those aimed at." Here is the keynote to the present situation, if we are to have good results from water treatment.

We will now consider hydrotherapy from a physiological point of view.

Reaction.

The desired therapeutic effect of cold water is *reaction*. This is derived from its thermic and mechanical action upon the cutaneous surface. Cold water applied to the skin drives the blood into the subjacent vessels which contract. The action of the cold water (below 90 F.) is followed by increased force of the heart beat and a filling of the finest capillaries at the surface, which process, together with certain other phenomena, refreshment and heightened functions, constitutes *reaction*. Reaction is therefore the resultant of secondary physiological effect upon the sensory nerve terminals, and, second, upon the muscular coat of the blood vessels ramifying through the skin.

Nerve Reaction. The action of cold water upon the sensory nerve terminals causes local excitement which is conveyed by the sensory tracts to the central nervous system and thence reflected to other parts. Nerve reaction takes place when the central nervous system is roused to respond to the demand made upon the cutaneous sensory terminals.

Vascular Reaction. The primary effect of cold applications upon the blood vessels is a constriction of the muscular and elastic fibres enveloping the capillaries and arterioles of the skin. This is action. The secondary effect is the return of the blood to the previously emptied vessels and is reaction. Great stress is laid on reaction, and when baths differ much from the normal body temperature, it is absolutely necessary to secure it. The appearance of the reaction is not usually as well manifested at the beginning of a course of bathing as in the subsequent baths, but reaction can be cultivated or brought out as the skin is trained to react.

The five conditions which influence reaction are as follows: 1. Condition of patient, physical and psychic. 2. Duration. 3. Temperature. 4. Pressure. 5. Technic.

It is as necessary to give explicit directions in regard to all these as it is to prescribe the dosage of medicinal agents, and under a separate heading each will be considered.

Condition of Patient.

There are patients who shiver at the thought of a cold, wet sheet or bath; some are afraid, while others are sceptical. To such patients it is necessary not only to explain the technic of the procedure and the probable effect, but also that definite improvement will probably not follow the first treatment. Unless this information is given, patients are likely to be surprised when there is no apparent result after the first treatment.

The physical condition of the patient, age, sex and condition of the blood vessels should be carefully ascertained. Patients advanced in years, in whose vessels atheromatous changes have taken place, should not be subjected to prolonged procedures, and care should be taken not to throw too great a strain upon the

inelastic and feeble vascular coats. Patients who are anemic or suffer from defective nutrition should not be subjected to procedures which abstract much heat.

Duration.

It should be borne in mind that brief applications of cold water, delivered under high pressure, or accomplished by good mechanical irritation, are useful in anemic cases, because they do not abstract much heat, and aim by their evanescent action to call forth a reaction. As a result the cutaneous vessels are filled with blood and counteract the anemic condition. This adds duration, which is another one of the legs upon which stands a hydrotherapeutic prescription.

Temperature.

In regard to temperature, the terms cold water, warm water, luke-warm water and hot water indicate approximate temperatures upon which there is no consensus of opinion. These terms should be abandoned, and a definite degree of temperature stated. Many regard water cold which is drained from the source of supply. The danger of such indefiniteness is made evident by the fact that in Boston the Metropolitan supply varies from 43 degrees in December to 72 degrees in August. It will readily be seen that in a careful prescription it is a matter of difference whether water at 45 degrees or 75 degrees is applied. The exact temperature should be prescribed in degrees.

Pressure.

The greater the volume the greater the effect produced both thermically and mechanically, other things being equal. If a douche is given upon the back of a robust patient at a temperature of 70 degrees for two minutes, under a pressure of 30 pounds to the square inch, the skin assumes a bright hue. When the pressure of the stream is reduced to 10 pounds, the skin is scarcely reddened. (The average range of pressure is between ten and thirty pounds.) When the same stream at high pressure is applied to an emaciated depression case, very little redness appears because the circulation of such a patient is feeble. It is well in all cases to begin with the mildest procedures and gradually increase the duration, pressure and temperature until the patient's reactive capacity has been ascertained. No remedy demands more careful judgment and more accurate knowledge of the patient's condition than the scientific application of water. To bring about a good reaction the temperature, pressure, duration and technic should be prescribed. As a rule, the colder the water and the shorter the duration, the more marked will be the reaction and the quicker it will appear. Also, the reaction is more intense and more readily produced when the skin is warm and the subcutaneous tissues well supplied with blood. The cold applica-

tion should therefore be preceded by some warming process which insures more or less perspiration, such as the electric light cabinet, for five or seven minutes. As a substitute in the home, the dry, warm pack gives good results. A mild procedure for beginning a course of treatment in the home is the following:

Prescription. Dry pack with hot water bottles, fifteen minutes.
Cold mitt friction to the entire body.
Temperature of water 70 degrees F.
Repeat daily, gradually reducing the temperature of the water to 60 degrees F, or lower.

The technic of the pack will be described under packs.

Technic.

The various methods of applying water are called technic, and I will now outline the technic of cold friction or ablution. By *cold friction* is meant a procedure which consists of a series of local wet rubbings applied to one part of the body after another in systematic order until vigorous reaction has been produced in the entire body. It is best given with a mitt, made of a rough material dipped in a basin of water. The stimulation of the peripheral nerves produces a marked reflex effect on the nervous system and circulation. Therefore cold friction may be given in bed to patients who are not strong enough to receive the douche treatment. It is used in anemic or poorly nourished patients suffering from neurasthenia, psychasthenia, hysteria, and depression.

Douche.

The douche is often given as a stimulating procedure to patients who react well to the wet mitt friction, but the reaction depends upon the pressure under which the water is delivered, upon the size of the stream and upon the distance of the patient from the attendant. But in the home, since it is not possible to measure the pressure, I would suggest as a valuable substitute, the affusion or drip sheet.

Affusion. The affusion is a procedure by which the patient sitting or standing in the empty tub, or lying upon a rubber cot, receives upon his head, shoulders and body, a stream of water coming from a bucket, and according to the height from which the water is poured, and upon the low temperature, of 50 degrees to 65 degrees, will depend the stimulating effect. With feeble patients it is well to begin with a higher temperature and a short distance. The whole procedure should be rapidly executed, the patient standing or lying in water at 100. It is more energetic treatment than the wet mitt friction because of the brief duration, the continuous force of the water impingement and the large surface treated. This is the form of cold water treatment which was practised by Currie with so much success that it has become the basis of modern hydrotherapy.

The effect of affusion is simple. The sudden impact of a

considerable volume of cold water propelled with decided force upon a large surface of the body produces an intensification of mechanical and thermic influences upon the sensory cutaneous nerves. Conveyed to the central nervous system, the reflex effect upon respiration, cardiac action, assimilation and nutrition is decided and unmistakable. If it is administered with care and precision as to the temperature and the patient's reactive capacity it is an excellent substitute for the douche in chronic conditions. The drip sheet is used also as a substitute for the douche, as a tonic in melancholia, neurasthenia, and the psychoses, chronic rheumatism and general run-down conditions.

The Sheet Bath. The patient stands in a foot or bath tub containing twelve inches of water at 100 degrees to prevent chilling; a sheet dipped in water at 80 degrees and gradually reduced to 60 degrees is then placed dripping over the patient's shoulders and back in the following manner: the upper border of the sheet is held by the left hand of the nurse, while the right hand gathers the right border into folds. The sheet is then dipped in a bucket of water from which it is taken dripping and applied under the right axilla of the patient. The patient then presses the sheet firmly to his side with the right arm. The nurse draws upon the wet sheet at the same time to insure its clinging to the body. When the entire body is covered, the upper border of the sheet is tucked round the neck, and the lower border is wrapped around the legs. The nurse then makes rapid passes up and down the back, side and lower extremities with the outstretched hand and occasionally slapping the surface to increase mechanical irritation. A basin of water from 10 to 15 degrees below the temperature of the sheet is poured over the shoulders two or three times at short intervals with alternating friction from five to ten minutes. The sheet is then rapidly withdrawn and the patient thoroughly dried, followed by friction with a warm sheet or towel.

The Cold Pack. A square blanket is spread upon the patient's bed and upon this a sheet wrung out after being dipped in water at 60 degrees. The sheet is quickly spread and wrapped around the patient but should not extend beyond the junction of the head and neck. While the patient's arms are raised one side of the sheet is quickly drawn across and tucked under the opposite side and folded between the lower limbs, then carried across and smoothly applied, enclosing both arms and lower limbs. Hot water bottles are placed at the feet and upper blanket adjusted, except that it is not tucked between the lower limbs, and the surplus blanket is folded under the feet. The blanket should be closely adjusted at the neck so as to exclude all air. If the patient reacts well, she may be left in the pack for one or two hours. At the German water cures, insomnia cases are left in the pack all night. If, however, the patient still shivers after ten minutes it is an indication that the treatment is too strenuous. The sheet should be removed and she should be wrapped in blankets and friction applied. In fevers the first impression of cold water upon

the surface will cease abruptly and give way to a process of vaporization. This induces a soothing effect upon the peripheral vessels and nerves, and patients who have been tossing restlessly, usually fall asleep.

Effect of Cold Pack. The following is a history of a patient who was much benefited by the cold pack. *Case I.* A thin anemic woman of 55 years, profoundly depressed, with periods of excitement, inattentive to her surroundings, moaning constantly, appetite poor, constipated, urine dark and scanty, and sleeping about two hours out of twenty-four. She had such an aversion to cold procedures that she was given various warm applications, but with no apparent result. We next prescribed a cold wet pack. As a result she began to sleep five or six hours; urine increased in quantity; appetite was better, and she began to take interest in her surroundings. From that time she went on to recovery.

Hot Pack. For the patient who dreads cold water or is too weak or sensitive to have the cold pack applied with much benefit, the hot pack may be substituted. The technic is identical, except that the sheet is wrung out of water at 115 degrees to 120 degrees F. By the time this is spread upon the blanket and wrapped around the patient, it has lost some of its heat. It is well after wrapping the patient to splash some more hot water on the sheet before folding over the blanket. The effect of this procedure is that of a sedative and of its value Dr. Frederick Peterson says: "As a general hypnotic agent, applicable to all forms of insomnia among the insane, the hot wet pack stands foremost," and the following case well represents its use in cases of excitement. *Case II.* The patient was a woman of thirty-five, a social worker. For several months she had been mildly exhilarated at her menstrual periods, and on admission to our hospital was markedly excited. She refused food, and slept not at all. She was placed in the continuous bath, temperature 95 degrees, with no effect. She was then placed in a hot pack, with marked effects, getting several hours of sleep during the night and remaining quieter during the day. Doubtless some of the effect was due to the element of restraint which forced upon her certain repose.

The hot pack and especially the continuous bath have revolutionized the treatment of mental cases. The effect of these measures changes the patient's behavior from that of excitement and restlessness, refusing food, constipation, scanty and high colored urine, to that of a passive state, taking large quantities of liquid, urinating freely and sleeping. Instead of becoming emaciated during the period of excitement, the patient gains in flesh and makes a more speedy recovery. And best of all, how much more human this treatment is than camasols, bed sheets and other forms of restraint!

The warm bath exerts a positive effect upon the peripheral sensory nerve terminals, which are regarded by physiologists as the outposts of the nervous system and which convey all impres-

sions directly to the brain. Heyman and Krebs hold that the nerve terminals are rendered succulent, and as a result sensation becomes blunted. They substantiate their claim by demonstrating that this slow inhibition of water by the nerve endings and their surrounding structures reduces their sensibility, while a withdrawal of water from them enhances the latter. In luke-warm baths, endomosia fills these structures with water, either by direct absorption or by the cessation of insensible perspiration. Kolleks, also, has shown that succulence of the nerve terminals decidedly diminishes their irritability and lessens their sensitivenss to excitement.

Continuous Bath. This can be given in any home and deserves far wider application as a sedative in nervous conditions than it has received outside of hospitals. It is not commonly known that the temperature of the normal skin surface is 90 degrees F. A tub of water at a temperature of 90 degrees to 96 degrees is neutral and is the temperature used for the continuous bath. A long, deep tub is preferable, but any tub in which the patient may be submerged to the chin will suffice. If the patient is to remain many hours, the bath may be made more comfortable by making a hammock of heavy cotton and fastening it to the rim of the tub by hard wood clothes pins or by a wooden frame made to fit over the tub. The nurse should watch the temperature of the water with a bath thermometer, from time to time, and add sufficient hot water to keep the temperature at 96 degrees. If the patient is kept in the tub for many hours she should be taken out every eight hours, her skin oiled with lanoline to prevent shrivelling and excoriation. Care must be taken to give the bath at the exact temperature, and to make the patient comfortable in the tub. The following case illustrates the bad results of the bath given at a temperature of 100 degrees. A woman 37 years of age became mildly exhilarated, very talkative and sleepless. Her family physician suspected an oncoming mania, and prescribed a warm bath without specifying the technic. The bath was given at 100 degrees F., which the nurse determined was about warm by the feeling of her hands, forgetting that the hand is accustomed by habit to high temperature. If one has not a thermometer the elbow is much safer to trust than the hand in guaging the temperature. The result was that the patient became restless and finally faint, and the bath was discontinued. Later, when given at the proper temperature, she responded well, became quiet, and made a good recovery.

If, however, it is desired to allay acute pain, as in renal or gall stone colic, where local moist heat has failed, the full tub at a temperature of 100 degrees F. raised gradually to 105 degrees after the patient is in the tub possesses remarkable anodyne qualities.

Conclusion.

(1) Hydrotherapy is a therapeutic measure of such far reaching value that it is lamentable that it does not receive more attention in our medical schools.

(2) Its neglect is in part due to the human tendency to seek the newer and greater thing, overlooking the simpler and more natural method; to lack of instruction; to careless prescribing and faulty technic.

(3) The success of all stimulating measures depends upon Reaction, which in turn depends upon (a) Condition of patient, (b) Duration of application, (c) Temperature, (d) Pressure, (e) Technic.

(4) Stimulating treatments which may be used in a home without apparatus are: (a) The Wet Mitt Friction; (b) The Affusion; (c) Drip Sheet; (d) Cold Pack.

(5) The sedative applications are: (a) Hot Pack; (b) Neutral Bath at 95 degrees; (c) Warm Bath at 100 degrees.

OWEN FEDERAL PUBLIC HEALTH BILL.

A Bill to establish a Department of Health, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be at the seat of government an executive department known as the Department of Health, and a Director of Health, who shall be the head thereof; and the provisions of title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The Director of Health shall be appointed by the President, by and with the advice and consent of the Senate, at a salary of dollars per annum and with tenure of office like that of the heads of the other executive departments. And said Director shall cause a seal to be made for the Department of Health, of such device as the President approves, and judicial notice shall be taken of said seal.

SEC. 2. That there be in the Department of Health an assistant to the Director of Health, designated and known as the Commissioner of Health, who shall be a skilled sanitarian, appointed by the President, by and with the advice and consent of the Senate, who shall serve at the pleasure of the President, and who shall receive a salary of dollars per annum. The Commissioner of Health shall perform such duties as are required by law and such as are prescribed by the Director of Health. There shall be also a chief clerk, a disbursing clerk, and such other employees as Congress may from time to time authorize. The Auditor for the State and Other Departments shall receive and examine all accounts of moneys paid in and of moneys expended on account of the Department of Health, and shall certify the balance arising thereon to the Division of Bookkeeping and Warrants of the Treasury Department, and forthwith send a copy of each such certificate to the Director of Health.

SEC. 3. That it be the province and duty of the Department of Health to foster and promote all matters pertaining to the conservation and improvement of the public health, and to collect and disseminate information relating thereto: *Provided,* That this Act shall not be construed as attempting to authorize the Department of Health to exercise or attempt to exercise, without express invitation from the chief executive or other proper authority of the State, any function belonging exclusively to such State, or to enter any premises in any State without the consent of the owner or occupant thereof; but the Director of Health, upon request of the chief executive or other proper authority of any State, Territory, the District of Columbia, or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the Department of Health to assist the health authorities of such State, Territory, District or insular possession in protecting and promoting the health of the people of such jurisdiction: *And provided further,* That the Depart-

ment of Health established by this act shall have no power to regulate the practice of medicine or the practice of healing, or to interfere with the right of a citizen to employ the practitioner of his choice within any State of the Union, and all appointments within the department, including the head of the department, shall be made without discriminating against any school of medicine or of healing.

Sec. 4. That to the Department of Health are hereby transferred the following bureaus, divisions, and other branches of the Government, and all that pertains to them, and they and each of them shall remain under the supervision and direction of the Director of Health until otherwise directed by law, namely:

(a) From the Department of the Treasury is transferred the Public Health and Marine-Hospital Service.

(b) From the Department of Agriculture is transferred that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs, and liquors, and with the execution and enforcement of the Act of Congress entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," approved June thirtieth, nineteen hundred and six.

(c) From the Department of Commerce and Labor is transferred the Division of Vital Statistics, Bureau of the Census.

And the President is hereby authorized to transfer to the Department of Health at any time either the whole or any part, as to him may seem best, of any bureau, division, or other branch of the Government engaged in work pertaining to the public health, except the Medical Department of the Army and the Bureau of Medicine and Surgery of the Navy.

And each and every function, authority, power, duty, and jurisdiction, of whatsoever character it may be, vested at the time of any transfer aforesaid in the head of the executive department from which such bureau, division, or other branch of the Government is transferred, shall, to the extent to which such function, authority, power, duty, or jurisdiction pertains to such bureau, division, or other branch of the Government, immediately upon such transfer become vested and thereafter remain vested in the Director of Health.

All land, buildings, furniture, apparatus, equipment, and property of whatsoever description, and all official records and papers, in the custody of any executive department from which any bureau, division, or other branch of the Government is transferred as aforesaid and pertaining to the business of such transferred bureau, division, or other branch of the Government, shall at the time of such transfer, or as soon thereafter as practicable, and in so far as such action can be taken without hindering the work of the executive department from which such transfer is made, be given over into the custody of the Department of Health. And all unexpended balances of appropriations available at the time of such transfer for the use of any such transferred bureau, division, or other branch of the Government, or which may become available thereafter, shall be and remain available, in similar manner and to the same extent as if no transfer had been made.

Sec. 5. That within the Department of Health there shall be the following bureaus:

a, Bureau of Sanitary Research;
b, Bureau of Child Hygiene;
c, Bureau of Vital Statistics and Publications;
d, Bureau of Foods and Drugs;
e, Bureau of Quarantine;
f, Bureau of Sanitary Engineering;
g, Bureau of Government Hospitals;
h, Bureau of Personnel and Accounts,

and the Director of Health is hereby authorized to arrange and rearrange from time to time, with the approval of the President, the functions, duties, personnel, papers, records, and property, and the work, resources, and equipment generally, coming into the jurisdiction and control of the Department of Health by the operation of this Act, so as most efficiently and economically to organize and maintain the several bureaus herein named and such divisions and offices thereof as to said Director seems proper; but in arranging and rearranging the personnel, the rank, pay, and allowances of the officers of the Public Health and Marine-Hospital Service commissioned at the time of the transfer of that service to the Department of Health shall not, by reason of anything in this Act contained, be diminished. And the Director of Health may call upon the heads of other executive departments for information in their possession whenever such information is needed for the efficient and economical working of the Department of Health.

SEC. 6. That the President is hereby authorized to detail officers and employees from any of the several executive departments of the Government for duty under the Director of Health when so requested by said Director, and to detail officers and employees in the service of the Department of Health to any of the other executive departments upon request of the head of such department, provided such detail can be made without prejudice to the public service, to carry into effect the purpose and intent of this Act; but officers and employees so detailed shall receive no additional compensation, but shall be paid such actual and necessary expenses as they incur in the discharge of their duties.

SEC. 7. That the Director of Health may, in his discretion and with the approval of the President, appoint an advisory board of not more than seven members, to confer with him upon his request, from time to time as he deems necessary, concerning the work of the Department of Health and the health of the people. The members of said board shall be selected because of their special knowledge of matters relating to the public health, and each shall hold office for a term of seven years or until his successor is appointed, except that the appointments first made, and appointments thereafter made to fill unexpired terms and terms of members who have held over beyond the periods of their original appointments, shall be made so that not more than one member shall retire during any one fiscal year. No member of any such advisory board shall receive any compensation for his services, but each shall be paid all actual expenses necessarily incurred in the discharge of his duties. And from and after the passage of this Act the advisory board for the Hygiene Laboratory created by section five of an Act entitled "An Act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July first, nineteen hundred and two, be, and the same hereby is, abolished.

SEC. 8. That the Director of Health may, whenever in his judgment public interests would be promoted by so doing, invite the duly constituted health authorities of all or of any of the States, Territories, the District of Columbia, and insular possessions as to him may seem advisable, each to send one delegate to confer with him or his duly appointed representative or representatives and with each other, at such time and place as he may designate, concerning any particular matter or matters relating to the public health; and it shall be the duty of the Director of Health, upon the written application of the duly constituted health authorities of not less than five States, Territories, the District of Columbia, or insular possessions, stating the particular matter or matters which it is desired to consider, to appoint a time and place, and to call a conference of the health authorities of the States, Territories, the District of Columbia, and insular possessions that united in the request therefor, and personally or through his duly appointed representative or representatives to be present at such conference; but every State, Territory, the District of Columbia, and insular possession shall be notified of every conference, and if practicable be afforded an opportunity of being present and participating in its proceedings. And from and after the passage of this Act annual

and other conferences of State and Territorial boards of health, quarantine authorities, and State health officers, provided for by section seven of an Act entitled "An Act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July first, nineteen hundred and two, be, and the same are hereby, abolished.

SEC. 9. That, except as expressly provided in this Act, nothing herein contained shall be construed as limiting or abrogating any function, right, or duty imposed by law upon any existing bureau, division, or other branch of the Government; but such bureaus, divisions, and other branches of the Government as are by the Act or by authority thereof transferred to the Department of Health shall continue, under direction of the Director of Health, to have such functions, duties, and rights as they have at the time of such transfer; and in the case of such bureaus, divisions, and other agencies of the Government as are transferred in part only, the part not transferred shall continue to have and to exercise all such functions, duties, and rights, except such as specifically relate to the part transferred to the Department of Health, in the same manner and to the same extent as if no such transfer had been made.

SEC. 10. That the Director of Health shall annually submit to Congress a report in writing showing the operations of the Department of Health during the last preceding fiscal year, which report shall give an account of all moneys received and all moneys disbursed on account of such operations. He shall make such other reports from time to time as may be required by the President, or by either House of Congress, and such as are in his judgment necessary or expedient.

SEC. 11. That ——— dollars be, and the same are hereby, appropriated to carry into effect the provisions of this Act, out of any money in the Treasury not otherwise appropriated.

SEC. 12. That all Acts and parts of Acts contrary to the provisions of this Act or inconsistent therewith be, and the same are hereby, repealed.

SEC. 13. That this Act shall take effect on and after July first, nineteen hundred and twelve

HOMŒOPATHY'S LARGEST HOSPITAL.

The Metropolitan Hospital, on Blackwell's Island, New York, now enjoys the one advantage it has hitherto lacked to make its service of the greatest value. A Reception Hospital with a motor ambulance, which in six months answered 1908 calls, brings every variety of acute and surgical case to the wards. No hospital can now offer a more attractive service for internes. Its eighteen months' course is divided so that each man serves in each division in rotation. Last year the 11,138 patients were divided as follows:-

Surgical, 1802.
Medical, 2803.
Genito-urinary, 604.
Mental and nervous, 291.
Children, 376.
Eye and ear, 196.
Nose and throat, 57.
Obstetrical, 218.
Gynecological, 104.
Tubercular, 4687.

1020 surgical operations were performed. A hint of the pathological treasures that abound is given by the number of autopsies, 194, performed in the year.

This hospital, maintained by the Department of Charities of New York, has recently opened several new buildings. The new staff house resembles a well appointed club. The pathological building is perfect in arrangement for the utilization of the vast supply of morbid material. The two new pavilions for tuberculosis are equal in design and equipment to any yet built. Service by internes in the tuberculosis division is salaried.

EDITORIAL.

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SOMETHING TO QUIET THE NERVES.

To those who are still throwing fits over what may happen if the Owen Bill becomes a law, here is a real, mild, quieting powder, in fact, nothing less than the bill itself with all the awful things right in it where he who runs may read. Printed elsewhere in the *Gazette* is a full copy of the Bill. (See page 99 *et seq.*)

If any one will read carefully Section Three he must see that the rights of every legitimate practitioner of medicine are thoroughly safeguarded. In fact the Federal Government could not abrogate those rights in the face of definite State laws if it so wished. It does not in the slightest interfere with any licensed physician practicing as he chooses nor any person employing whatsoever physician he may choose.

Section Four is what makes the Patent Medicine gang and the Impure Food squad sit up on their hind legs and let out most mournful howls to the tune of "I want to be a Medical Freedman and with the Freedman stand, to sell my little humbug pill and dope my catch-up brand."

No wonder it makes them howl; there is good reason for it. When that powerful organization of patent medicine manufacturers and impure food producers see a menace to their profitable trade it is not surprising that they howl, not so much for Medical Freedom as for unlimited license to continue to humbug.

This section provides specifically that the proposed Bureau of Health shall be entirely distinct and independent of the Department of Agriculture, under which department the Bureau of Chemistry now stands, and where Dr. Wiley is so badly handicapped in his efforts to enforce pure food laws. Once let Dr. Wiley out of that cage so closely guarded by the politicians of the Wilson-McCabe stamp, and it is quite likely there will be something doing for the patent medicine and adulterated food makers.

"THE SICK-A-BED-LADY."

However necessary or unnecessary the doctor may be in the future, as long as the human race continues to be perpetuated through the medium of parturition there will be required some kind of a skilled assistant to render her aid, especially in those unusual cases which have not followed a normal course. If the fact is not appreciated now it soon must be that the future good health of the woman who has had one or more children depends in no small measure upon the skill and painstaking effort of her accoucheur.

The recent plea sent out by Committee of the American Gynecological Association deserves more than a passing notice. In that plea Dr. Barton Cooke Hurst urges all of our medical schools to put more emphasis upon the instruction given in obstetrics, especially clinical instruction. He adds that lack of adequate preparation in this branch is productive of more harm to the community than deficiency in other branches.

There is no greater responsibility placed upon the physician than that of conducting the mother and her new born child safely through the perils of parturition. Not only should our students have a most thorough training by skilled and experienced instructors with ample clinical facilities, but our older practitioners who did not have the advantage of present day knowledge and whose busy life has not allowed them to keep fully abreast of the times, should take occasional post graduate instruction in our large maternity hospitals and there add to their practical experience the new truths which have been discovered since they were students. How frequently do we hear a physician boast that he has practiced some 20 or 30 years and not lost a mother or babe, all of which is most commendable, but that is not the end of his duty to the mother and babe. If he but knew that an all too large proportion of his patients eventually became victims of the operating table and there underwent more or less serious operations for the repair and correction of defects resulting from careless or unskillful attendance, he would, instead of boasting, set about immediately to so inform himself that there would be the least possible number of such defects occurring in his practice.

The obstetrician has it in his power to so deftly and intelligently manage his part of the work that the gynecologist would be deprived of a very fertile and lucrative field of practice. Once eliminate the preventable defects consequent upon the parturient stage plus the diseases resulting from gonorrheal infection, and the operating table for women would have an opportunity to cool off.

Not only is the obstetrician responsible for the *life* of the mother, but he is responsible in great measure for the future *good health* of that mother so far as her pelvic organs are concerned. It is far from creditable to him that she must, years later, undergo an operation consequent upon some pelvic defect or that she has

been rendered incapable of bearing further children. It is comparatively rare that we now hear the boast that one has delivered 500 to a 1000 women without having a ruptured perineum; simply because it becomes an acknowledgment of stupidity in failing to recognize the rupture. It is oversights of that character which aid in rendering so many women semi-invalids.

Take the one single condition of subinvolution, that forerunner of uterine displacements, pelvic congestion, and general pelvic distress. Days or weeks are not the true index governing the lying-in period of the parturient woman, but rather the process of involution. What may be a long period to one woman becomes short to the next, simply because her uterus has not had sufficient time to regain normal size. No better foundation could possibly be laid for a future operation than to allow a parturient woman to get out of bed, go about her duties, indulge in marital relations, and otherwise take her place in the family, when the uterus is still large, flabby, and filled with unabsorbed and hyperplastic connective tissue. Rare, indeed, would be the instance wherein such a woman did not eventually find herself seeking the assistance of the gynecologist to aid her in overcoming a retro-placement, prolapse, procidentia, or chronic endometritis.

Not infrequently does the opportunity come to the obstetrician, to cure at the time of his patient's confinement, a previously existing retro-placement. A uterus which has been so displaced and is large and flabby becomes after confinement a very tractable uterus, freely amenable to a line of treatment which was not possible before confinement and which may forever cure the patient of her difficulty, and possibly avert a future operation.

By all means should our students be given the most adequate possible instruction in obstetrics, with ample opportunities for attending a large number of cases under a competent instructor both in obstetrics and gynecology, to the end that they may so conduct all details of their obstetric practice that but a minimum number of their patients need ever become victims of the operating table, sterile women, or neurasthenics.

PREVENTION THAT PREVENTS.

Picture, if you can, an industrial army digging, or attempting to dig, a ditch in the fever infected district of Panama, where the "dead wagon" makes its sepulchral rounds each morning, visiting the camps for the purpose of carrying out the dead who have succumbed in the night. Note, that one out of every five, be he native or Frenchman, who has dared invade this deadly region is taken back in the "dead wagon."

Picture again the ships which carried to the Isthmus French gold and machinery in abundance, but came back loaded with pine boxes containing the bodies of her citizens. Then the last picture of the abandoned, weed-grown ditch with its mute evidence of

death on every side. If we ask for a key to the picture it is given in the words Uncontrollable Disease.

Turn over a few leaves in history while 25 years elapse and now notice the picture. Another industrial army, far larger than the first, healthy, active, prosperous, successful, almost to completion. No cold corpses, but a few cold figures tell the story, and here they are in the last report of the Department of Sanitation of the Isthman Canal Commission.

In October, 1911, there was employed at the canal and its contingent works 37,496 colored, and 12,316 white employees; of that number 33 colored employees died of disease and six from violence, making a total of 39 deaths, or a mortality of 12.48 per thousand. The death rate for 1910 in the United States for all classes and climates was 16.1. The death rate for Charleston, S. C., for 1910, where they have a large negro population, and where the climate is not greatly unlike that of the Isthmus but regarded as far more healthful, was 29.7, more than double that at the Canal zone.

The mortality amongst the white employees was much lower. Of the 12,316, five died of disease and two from violence, a death rate of 6.82 per thousand.

The lowest death rate for any place in the United States was in West Orange, N. J., where it was 8.5. Moral, if you want to run the risk of living forever go to work for Uncle Sam at Panama.

What hath wrought the change from the days of the dead wagon under French management to the days of good health and low mortality under American management? Simply sanitation, and sanity. The prevention of disease by the enforcement of recognized, scientific laws of sanitation, and sane common sense methods of eating, drinking, and living. Who discovered these methods of prevention and evolved the laws of sanitation which has made possible the "greatest engineering feat of the world"? "Oh, just some doctors."

THE MONTH'S BEST BOOKS.

Diseases of the Eye and Their Treatment. Swanzy & Werner. $4.00. P. Blakiston's Son & Co.

Practical Gynecology. Montgomery. $6.00. P. Blakiston's Son & Co.

Genito-Urinary and Venereal Diseases and Syphilis. Hirsch. $1.00. P. Blakiston's Son & Co.

PERSONAL AND GENERAL ITEMS.

Dr. Robert F. Souther has opened an office at the Charlesgate, 535 Beacon Street, and will in future specialize in surgery only.

Dr. Conrad Wesselhoeft, 2nd, has opened an office at 535 Beacon Street, Boston. Specialty, obstetrics.

JUNIOR ASSISTANT PHYSICIAN WANTED.—There will be a vacancy in the position of junior assistant physician on the male side at Westborough State Hospital. Applicants should communicate with Dr. Geo. S. Adams, Supt., Westborough, Mass.

Dr. F. S. Eveleth has removed from Amesbury, Mass., to 188 North Main Street, Concord, N. H.

Dr. Elizabeth Henderson Lang McClure, a graduate of Boston University School of Medicine in the class of 1877, died in Philadelphia in December last. She was a member of the American Institute of Homœopathy, the State and County Societies.

Some time ago Mrs. O. H. P. Belmont gave to Hempstead, L. I., a hospital, with a provision that the town maintain it properly. As this has not been done the hospital was recently sold at auction.

The first woman ever admitted as a fellow of the Royal College of Surgeons is Eleanor Colley, who was elected in December last.

By the will of the late Mrs. Anna F. Galand of Chicago, a sum of $200,000 was left for the purpose of erecting a building for the study of infectious diseases. This building is to be four stories high, and a site for it has already been selected.

The New York State Civil Service Commission announces an examination to be held on February 24, 1912, for the position of Junior Physician (homœopathic or regular) in the New York State hospitals for the insane, at a salary of $900 and maintenance, increasing $100 each year to a maximum of $1200 and maintenance, beyond which point advancement is made upon promotion examinations. As the Commission has experienced difficulty in securing a sufficient number of eligibles from among residents of New York State, it has been decided to admit residents of other States, and the Commission is endeavoring to make arrangements for holding this examination in Boston, Philadelphia, Washington, Cincinnati, Chicago, St. Louis and St. Paul. Anyone interested should write at once to the "New York State Civil Service Commission," Albany, N. Y., for application blank and full information.

The Annual Meeting of the Loyalty Committee of Boston University School of Medicine was held on January 26, at the Medical School. Plans of great importance to the welfare of the School were discussed and the policy for the year outlined.

The officers and committee for 1912 are: President, George R. Southwick, M.D.; Secretary, William A. Ham, M.D.; Treasurer, Dana F. Downing, M.D.; Board of Directors: the officers and Drs. S. H. Calderwood, J. Arnold Rockwell, Wesley T. Lee, W. H. Watters; Finance Committee, Drs. Southwick, Ham and Downing; Auditor, Mrs. Lillian G. Knowles. The Committee adjourned to meet again on March 4.

It may be remembered that the announcement was made of the donation of $1,000,000 by the late George Crocker for the purpose of establishing a Cancer Research Fund in Columbia University. Three of the step-children of the donor contested the will, and final decision has just been handed down. By it the plaintiffs receive $60,000.

Dr. Charles H. Mayo, while visiting in the East, was taken with an acute attack of appendicitis for which operation was performed in the Presbyterian Hospital of New York by Dr. J. H. Blake. A week later symptoms of acute cholecystitis appeared, necessitating a second operation for this condition. Convalescence proved uninterrupted.

Newspapers report that Dr. Otto Schmidt of Koln, Germany, has made formal application for the Mariani Prize of $20,000, an Italian reward offered for the discovery of a cure for cancer. The doctor is said to claim that he has already cured many cases by the use of special serum that he prepares.

By the will of the late Miss Jennie M. Smith of Philadelphia the Alleghany General Hospital and the West Pennsylvania Hospital each receive a bequest of $10,000.

The Woman's Hospital of Pittsburg is the recipient of real estate in Pittsburg valued at $1,500,000 under the will of the late Thomas N. Miller of that city.

Miss Alice Stone Blackwell, the well-known New England writer and suffragette, has given to the Women's and Children's Hospital her old home in Dorchester for the purpose of establishing a convalescent home.

The Maine General Hospital receives the sum of $5,000 by the will of the late W. P. Preble who recently died in New Brighton, N. Y.

The Massachusetts Highway Commission reports that during the first eleven months of the year 1911 there were 1357 automobile accidents in the State, in which 1100 persons were injured, and nearly 100 were killed.

Some time ago the employees of the John Wanamaker Store in Philadelphia raised a subscription and purchased the birthplace of the founder of the firm, located in the southern part of the city, and donated it to Mr. Wanamaker. He made announcement that he would place the property and the surrounding grounds in trust, with three trustees from different departments of the store, and would erect there a hospital for sick children.

"Eleven cases of chronic disease of the adnexa of apparently gonorrheal origin have been treated by vaccine. In three cases very definite results seemed to be obtained. One of these cases was treated with vaccine alone (100,000,000 bi-weekly) and improved steadily. The history was positive, but the smear negative. In two cases the vaccine treatment was combined with local treatment, and while it is difficult to state positively, it seemed that recovery was more prompt than when local measures were used alone. In one of these cases, a private patient, the result was almost brilliant. In the eight other cases no definite improvement was noted except in the relief of dysuria."—American Journal of Surgery.

NEW BRITISH ARISTOCRACY.

Recently in these columns was noted the elevation of Dr. William Osler to the title of Sir William. Just now we learn that the man who made fortune and fame by the sale of the well known Beecham's pills is now to be known as Sir James Beecham. It will be interesting to learn of the attitude of these two new baronets toward each other along medical lines.

ANNUAL REPORT OF FAULKNER HOSPITAL.

The report of the Faulkner Hospital, Jamaica Plain, for the year ending May 1, 1911, shows that during this period 440 patients were treated in the institution, an average of about 17 days for each patient.

It was recently voted by the trustees to permit members of the Massachusetts Homœopathic Medical Society to send their patients to the Hospital on the same terms as members of the Massachusetts Medical Society. Possible cause for friction among the medical fraternity in Jamaica Plain seems to have been elimated in every way.

STATE VACCINATION COMMISSION FOR PENNSYLVANIA

Governor Tener of Pennsylvania has appointed a state vaccination commission in accordance with the law recently passed. This law provides two members of the board pro-vaccinationists and two anti-vaccinationists. The following have been appointed to this commission: Dr. William H. Welch, Dr. Jay F. Schamberg, Ex.-Gov. Pennypacker, George W. Pepper, Emil Rosenberger, Porter F. Cope and John Pitcairn. This commission will investigate the history, pathology, and nature of small pox and of vaccination, and will also study the various sources from which vaccine virus is obtained.

THE LITTLE FLY THAT KILLS 75,000 AMERICAN BABIES A YEAR!

A fly is a very little thing.

But one fly has in a season 5,184,663,552,000,000,000 descendants.

It is bred in filth. It carries filth and germs into homes and deposits filth and disease germs upon the lips and bodies of babies and adults.

5,000 babies die every year in New York City from germs carried by flies.

75,000 babies die every year in the United States from the same cause!

In every generation 170,000,000 years of life—the equivalent of 4,000,000 lives of average length—are lost through the fly nuisance!

Over twenty billion dollars is spent every year for fly screens and other means of protection against the insect.—American Examiner.

TUBERCULOSIS AND INSURANCE.

In the Medical Record of November 4, Parker contributes a paper upon "The Healed Tuberculous Lesion from a Life Insurance Standpoint." In this he quotes Lawrason Brown of Saranac as saying that "it is a foolish thing for companies to refuse insurance to a man who has had tuberculosis and lives in a good climate, while they accept applicants who live in ordinary climates which may or may not be suitable. His experience teaches him that the patients who recover and live in the so-called health resorts remain well, while those who return home are more or less uncertain. He thinks the prognosis in tuberculosis is notoriously uncertain and that time is the only true test. He believes in the cases permanently arrested the patients must take the greatest care of themselves, and for this reason he thinks that a patient makes a much better arrest who is stolid and careful than one who is quick, impulsive, or neurotic to an extreme degree." He also quotes Pottenger as follows "(1) Patients may regain their weight and still have active tuberculosis. (2) Absence of all symptoms with signs of a healed process on auscultation afford strong presumptive evidence of cure, but is not absolute. (3) The only reliable test is the tuberculin test. If there are no symptoms or physical signs, and no reaction to ten mg. of tuberculin, one is safe in calling the case cured. If case has been treated with tuberculin, the test is not reliable until six months has elapsed since the last injection. (4) All cured patients should be careful not to subject themselves to any unnecessary strain."

UNIVERSITIES AND INSTITUTIONS OF RESEARCH.

President Butler of Columbia University in his annual report says that it is a mistake to establish research institutions, such as the Rockefeller of New York, apart from universities. He further asserts that it is a great mistake to believe that research work cannot be satisfactorily

carried on in association with teaching, giving as proofs the fact that during the past 100 years about 90 per cent of the best known scientific investigators have been teachers, and some of the most valuable original work has been done by those overburdened with teaching.

RETURN OF THE CRITIQUE.

Most of the homœopathic medical journals in their January numbers noted with regret and sorrow the announcement that appeared in the December number of the Critique to the effect that that periodical ceased its publication at the end of the year. It was therefore with some surprise that we received the January number of this Journal. We looked with much interest at its rehabilitation. It is stated by the editor, Dr. J. W. Mastin, to be on account of the many expressions of good will and esteem that the former had brought forth. He also states that the Journal will continue during the present year at least.

Dr. J. W. Anderson, who has for years filled the position of Business Manager, retires, leaving the entire field to Dr. Mastin.

In the past we had always anticipated the appearance of each monthly number and have read it with benefit. While not always agreeing with the sentiments brought forward in the paper or at times by the editor, we have learned to respect him, as being a fearless and earnest upholder of that which he believes to be right and just. As such, therefore, we are glad that he continues with us in the field. May his efforts be crowned with success!

INTERNATIONAL RED CROSS CONGRESS.

The following notice has just been received from the American Red Cross concerning the coming congress soon to be held in Washington:—

The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately $9,000, divided into nine prizes, one of 6,000 rubles, approximately $3,000; two of 3,000 rubles each, and six of 1,000 rubles each.

The subjects of this competition are as follows:

1. A scheme for the removal of wounded from the battlefield with the minimum number of stretcher bearers.
2. Portable (surgeons') washstands, for use in the field.
3. The best method of packing dressings for use at first aid and dressing stations.
4. Wheeled stretchers.
5. Transport of stretchers on mule back.
6. Easily folding portable stretchers.
7. Transport of the wounded between warships and hospital ships, and the coast.
8. The best method of heating railway cars by a system independent of steam from the locomotive.
9. The best model of portable Roentgen apparatus, permitting utilization of X-rays on the battlefield and at first aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

The General Exhibit is again divided into two parts; the first will be an exhibition by the various Red Cross Associations of the world. The second will be devoted to exhibits by individuals or business houses of any articles having to do with the amelioration of the sufferings of sick and wounded in war, which are not covered by the Marie Feodorovna Prize Competition for the year. While the American Red Cross will be glad to have any articles pertaining to medical and surgical practice in the field,

it is especially anxious to secure a full exhibit relating to preventive measures in campaign. Such articles will be classified as follows:

1. Apparatus for furnishing good water in the field.
2. Field apparatus for the disposal of wastes.
3. Shelter such as portable huts, tents and the like, for hospital purposes.
4. Transport apparatus (to prevent the suffering of sick and wounded) exclusive of such apparatus as specified for the Marie Feodorovna Prize Competition.

As with the Marie Feodorovna Prize Competition, for this country only articles having the approval of the Central Committee of the American Red Cross will be accepted.

Diplomas will be awarded for exhibits in this section of the exhibition as approved and recommended by the Jury.

Further information may be obtained from the Chairman, Exhibition Committee, American Red Cross, Washington, D. C.

It is perhaps to apparatus having to do with prevention of disease in armies that the energies of Americans have been specially directed since the Spanish-American War. Therefore, the last mentioned section of the Exhibition should make an appeal to them.

TREATMENT OF MISCARRIAGE.

Drs. Young and Williams have recently reported in the Boston Medical and Surgical Journal the results of treatment of two thousand cases of miscarriage at the Boston City Hospital. From such a large number deductions are made, which are as follows:

1. Spontaneous emptying of the uterus takes place in but about 13.2 per cent of all miscarriages.
2. The likelihood of a miscarriage to complete itself increases with the duration of the pregnancy.
3. When it becomes necessary to use artificial means to complete the miscarriage, the finger followed by the curette in later miscarriages, and of the curette alone in the earlier months of pregnancy has given uniformly satisfactory results at the Boston City Hospital.
4. Experience has shown that where the cervix is extremely rigid it is better to introduce the curette and break up the fetus and placenta and remove them piecemeal than to attempt to dilate the cervix sufficiently to introduce the finger.
5. Packing the vagina and lower segment of the uterus is an unsatisfactory and often unsuccessful method of emptying the uterus. No success whatever was obtained in treating incomplete miscarriages in this way.
6. Packing is, however, of great value in two classes of cases.

First, in exsanguinated patients, to stop the hemorrhage and give the woman a chance to recover somewhat from the loss of blood before emptying the uterus.

Second, when the cervix is very rigid, a tight cervical pack for twenty-four hours will soften it so that dilatation may be attempted with safety.

7. The results of artifical methods are as good, but not better than where nature has succeeded in emptying the uterus.
8. Artifical methods are necessary in a majority of cases, however, simply because nature has failed.
9. In infected cases the essential thing is to get rid of the infectious material by emptying the uterus; the particular method employed making little difference.
10. The later in pregnancy miscarriage occurs the smaller the liability to become infected, but the greater the likelihood of developing grave septic complications if infection does take place.
11. The mortality is practically the same at all periods of pregnancy.
12. Induced abortions have a greater mortality than accidental. The mortality of patients admitted to the hospital after criminal abortions was 10 per cent.

ANTIVIVISECTION.

So much is heard from time to time concerning the horrors of vivisection and the cold blooded cruelty of those who practise it that the following note, which recently appeared in "The Saturday Evening Post," is even more appreciated than otherwise would be. It gives the common sense view of the matter, but unfortunately such a view does not seem to be very popular with those who are constantly decrying the subject:

"One of the most eloquent appeals that has ever reached us comes from a devoted antivivisectionist. It is couched in such noble language and contains so many beautiful sentiments that upon reading it we immediately felt ourselves to be a little brother to the dog and the cat—a quite unworthy little brother too: one of the sort that privately eats the best apples in the basket before divvying up, and then lies about it.

Upon reflection, it set us to wondering what would be the effect if a carefully selected assortment of reptiles were suddenly liberated in an antivivisection convention. Would there be noble reminders of our duty to love all divinely created things—or wild shrieks for a club?

The whole strength of the antivivisection movement lies in the picture of a beautiful dog, bandaged, upon which scientists are about to perform an experiment. If the picture showed the anesthetic that makes the dog insensible to pain it would lose two-thirds of its appeal, and the movement would be correspondingly crippled. If it showed him frothing with rabies pity would change to abhorrence—except as the Pasteur treatment, made possible only by vivisection, has diminished our terror of mad dogs. If it showed an ugly animal—a bat, say, or a toad—nobody would care in the least what became of it. Many times more stray dogs and cats are killed in the city of New York alone than are used in all animal experiments; but they are presumably ill-conditioned, mangy brutes, and we never heard of a tear being shed over them."

COMPRESSION OF THE BRAIN.

"The dominating factor in cerebral surgery is the effect of compression upon brain tissue. While any other tissue may be compressed with comparative inpunity, nerve tissue is compressed only at the cost of immediate loss of function, with slow restoration if pressure be relieved, and atrophy without regeneration if pressure be not relieved. Its high degree of differentiation makes it easy prey to insignificant trauma, and its injury is frequently attended by early and easily recognized symptoms."—The American Practitioner and News.

ARTICULATING WITH THE HUMERUS.

If you should examine with a microscope the lungs of a dog what would you discover? The seat of his pants.

A lady patient who was telling her doctor what a restless night she had, said, "Oh, doctor, I just pasted the floor all night."

Every dog has his day, but a dog with a broken tail has a "weak end."

Dr. John Coffin tells us this one.—

Smith spent the evening with Jones, as their wives were away on a visit. Living in a village and having some distance to come Smith brought his lantern along to light his homeward pathway. They spent a most convivial evening, as they were both good judges of the various brands and blends. In the wee sma' hours Smith essayed to go home. Late the next morning Jones, somewhat anxious lest his friend had failed to recognize his own domicile and also noticing that Smith had forgotten his lantern, called him up over the 'phone.

"Good morning, Friend Smith, how are you feeling?——Oh, that's good. I'm glad to hear it.——Had no trouble reaching home?——That's good.——Fnd it very dark?——Well you're to be congratulated. Say, Smith if you have time today I wish you would come over and get your lantern, and when you come just bring along my parrot cage with the red headed parrot which you took last night. Good bye."

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ORIGINAL COMMUNICATIONS.

DEDICATION EXERCISES OF THE ROBERT DAWSON EVANS MEMORIAL BUILDING FOR CLINICAL RESEARCH AND PREVENTIVE MEDICINE.

On Wednesday, March 6, occurred the formal dedication of the new department recently added to the Massachusetts Homœopathic Hospital by the benefaction of Mrs. Evans in memory of her husband, and to be devoted to Clinical Research and Preventive Medicine. The exercises consisted of two sessions, one at 2.30 P. M., the other at 8 P. M. In the afternoon the exercises were opened by the formal speech of presentation. This was delivered by Dr. Frank C. Richardson, the Medical Director, acting as a personal representative of Mrs. Evans. Dr. Richardson briefly reviewed the history of the foundation and then presented to Mr. Edward H. Mason, President of the Board of Trustees of the Massachusetts Homœopathic Hospital, the deed of gift, and the keys of the building. Mr. Mason in accepting the gift spoke as follows:

ADDRESS OF ACCEPTANCE

By Mr. Edward Haven Mason, President Board of Trustees, Massachusetts Homœopathic Hospital.

The Massachusetts Homœopathic Hospital accepts most heartily and gratefully, but with all humility, the magnificent gift which is presented to it today; it is indeed an epoch in the history of the Hospital.

Three sister institutions, situated so near each other and equally closely united in their generous purposes and lofty aims, mutually rejoice in this new department, believing that all working in harmony, the ideal combination of facilities for usefulness is attained, unexcelled anywhere in our beloved country.

Only a little more than forty years ago, on January 23, 1871, the Hospital began its active work in a small hired house in Burroughs Place, accommodating sixteen patients.

In November, 1873, Boston University established its School of Medicine, taking over the building erected for the New Eng-

land Female Medical College, which had been established some twenty-five years earlier with twelve students, the first class of women ever assembled in America for the purpose of qualifying themselves for the medical profession.

The Homœopathic Medical Dispensary, incorporated in 1856, now forming the Out-Patient Department of the Hospital, at first occupied a small room in the upper story of Tremont Temple, and later a portion of the Burroughs Place house.

Only a very little less than twenty years ago, on March 16, 1892, there were all day festivities near this spot, celebrating the completion of the buildings as now occupied; in the morning the Hospital opened its Medical and Second Surgical wings; in the afternoon the Dispensary dedicated its new building on Harrison Avenue, and in the evening the School of Medicine celebrated the enlargement of the building which had passed to it about twenty years before, nearly doubling its capacity.

These three institutions have ever since been so closely connected and allied, each recognizing its dependence upon as well as its usefulness to the others, that we are accustomed to think of them as one institution and each rejoices in whatever of good or of honor may come to either of them.

The advances in medical and in surgical science during the history of our Hospital have been wonderful and the results show in the steadily increasing number of patients treated, the steadily decreasing average stay in Hospital and the steadily decreasing rate of mortality.

The number of patients treated in the main Hospital,—2,284 in 1900, 3,917 in 1905,—reached 5,213 in 1911.

The average stay at hospital, 25.4 days in 1895, 21.8 days in 1900, fell to 18.2 days in 1905 and 15.1 days in 1911.

The rate of mortality to patients treated, .0437 in 1900, .039 in 1895 was .034 in 1911.

The regularity of the progression in each successive year has been remarkable.

The advances in medical education have been equally wonderful.

At the time of the American Revolution, with a population of 3,000,000, there were probably 3,500 physicians in the Colonies, of whom it is estimated that not more than 400 had received a medical degree.

The medical student was practically the apprentice of some physician, then became his assistant, afterwards setting up for himself; his education came from experience.

The first public lectures on anatomy, in this country, are said to have been delivered by Dr. William Hunter, in Newport, R. I., in 1752; the first Medical College was a Department of the Uni-

versity of Pennsylvania, organized in 1765; in 1800 there were only three medical colleges and only two general hospitals.

Practically no preliminary general education was required for admission to the medical schools and the teaching was at long range:—by lectures and surgical exhibitions in large rooms and clinical visits in large groups; physiology, histology, organic chemistry, pathology and surgery as now recognized were hardly known.

The new education aims at imparting manual and ocular skill, through prolonged investigation at close quarters with the facts and through just reasoning on the evidence.

Much instruction is given to small groups of students, three or four at a time, no more than can actually see and touch for themselves.

Laboratory work demands a large part of the student's attention; investigation by means of the microscope of the various organs and tissues, both in health and in disease; the results of outward influences, whether physical or chemical; the relations of microscopic plants and animals to disease; the laws of immunity.

The term Preventive Medicine has been regarded as synonymous with public hygiene and its application has been confined almost entirely to infectious or communicable disease.

But Preventive Medicine in the broadest and best sense goes much further than protecting the community from communicable disease; it aims to apply the superior skill and knowledge of the present day to the protection of the individual from preventable disease of every kind.

Here is a large field for intelligent work.

It is believed that to a great extent this field lies in the education of the public, by the teaching of experts, as to how the public should live to avoid preventable disease of all kinds in the individual members of the community.

And for all these purposes:—the investigating of the causes of disease, and the manner of alleviating disease, and the prevention of disease, particularly through the education of the public, the Robert Dawson Evans Department of Clinical Research and Preventive Medicine is as perfectly equipped as present knowledge can command.

In an address delivered by Dr. William H. Welch, LL.D., of Johns Hopkins University, delivered at the forty-third anniversary of the Presbyterian Hospital in New York City last December, after congratulating the Hospital and the College of Physicians and Surgeons, Columbia University, that an alliance had lately been effected between them and lamenting that our hospitals and medical schools formerly closely connected had drifted apart, he made this statement:

"Throughout the world, the hospitals of the largest usefulness to the community are institutions which have combined the humanitarian with the educational and scientific interests of medicine."

Can this combination be found existing under better conditions than those we now have?

If we can rightly use the means now placed in our hands this will be the beginning of a new era for all these associated institutions, and we can best be true to our past history by more and better work in the future.

The expense of properly carrying on this work in a field almost unknown, naturally causes anxiety, but remembering that all this Hospital possesses has been bestowed upon it by the generosity of others, if we approach our task in a spirit of courage and humility, we may be sure that the same generosity of friends which has supplied our necessities in the past, will provide for our wants in the future.

It is an English custom, occasionally revived in America, for a city to grant to those whom it desires to especially honor, the privileges and immunities that belong to its freemen; it is our desire to grant to our benefactor the freedom of our domain and as we desire that she may at all times see for herself how our trusts and particularly the trust created by her, are being administered, as a symbol of this freedom, the Trustees direct me to present to Mrs. Robert Dawson Evans, this key. (A gold key presented to Dr. Richardson as Mrs. Evans' representative, and by him presented to Mrs. Evans in person.)

President Richard C. Maclaurin of Massachusetts Institute of Technology spoke as follows:

"We do well," said Dr. R. C. Maclaurin, president of the Massachusetts Institute of Technology, who had cut short a trip to New York to attend these exercises, "to mark an occasion such as this with ceremony and to direct the attention of the community to the significance of such a foundation as has here been laid in memory of Mr. Evans. There is so much noise in the world around us, such a din in the market place and such a clatter in politics that we are in danger of forgetting that the greatest and most important things in the world go on quietly, the march of science, the development of sympathy, the progress of enlightenment, the advance of philanthropy, the growth of charity. In this building will be carried on quietly and unobtrusively for many a day and generation, a great work for the alleviation of human suffering. It is all to be conducted under the guiding

torch of science and moved by that mighty engine of advancement that draws the world forward more rapidly in a generation than it would otherwise move in many a century." The speaker noted how today nearly everyone recognizes the power and might of science, and nearly everyone pays her at least the homage of the lips. Dr. Maclaurin said he had recently reviewed some of the controversies that had marked the foundation of the Institute of Technology, an institution devoted to science and its applications. It was attacked only a half-century ago on the ground that science is antagonistic to humanity. The idea was that science was unsuited to be an instrument of education because it dealt with nature rather than with men. This limited idea can find little favor today when science is seen to be human to the core. Even when it deals with nature, it deals with man's views of nature, but apart from this, half a century of its sway has displayed to the world something of the immensity of its power to make for human betterment.

"Science in the service of man," continued President Maclaurin, "is indeed the watchword of modern progress, and men and women who could serve their fellows in the future will find themselves handicapped unless they have learned to serve with the method and in the spirit of science. Serene, unprejudiced, patient, tireless, keeping ever to the solid ground of fact, she moves forward on her beneficent progress, showering blessings as she moves. Sickness vanishes away at the touch of her royal hand. Not only does she cure disease, she does what royalty never even claimed to do; she prevents it. This is perhaps the most precious boon to man, and it is in order that man may use this gift to the uttermost that this hospital is founded. It is indeed a noble foundation and we do well to celebrate it as a patriotic duty."

Dr. Maclaurin defended this country from the popular imputation of its being a "land of dollars," "for it is true," he said, "that nowhere in the world is wealth so nobly given for great causes,—the spread of education, the advancement of science, the encouragement of art and the alleviation of suffering. An institution, we have been taught, is the lengthened shadow of a man. This one will indicate to generations yet to come the real bigness of the man it commemorates. It will show his breadth of vision, his keen look into the future, his sympathy with humanity, his faith in research and in scientific education. It is an institution that can never die and it is one that will keep the name of Robert Dawson Evans in grateful memory forever."

Dr. John P. Sutherland represented the Medical Fraternity in the following remarks:

Ladies and Gentlemen:—

I think it will be conceded by all present, as well as by all friends of Homœopathy, by all friends of medical education in the broadest sense of the term, by all friends of true philanthropy, that today offers an occasion for felicitation, for consecration, for retrospection, and for prophecy; for we are gathered here to rejoice in the completion of a building that is to offer unique and exceptional facilities for performing a kind of work that is destined to prove of practical and far reaching value to humanity. We are gathered together to solemnly consecrate this building to the high service contemplated by its generous founder. And it is inevitable when gathered together for such a purpose that one's thoughts should become retrospective and that there should be marshalled before our mental vision the influences which have guided the evolution of the institutions of which this Memorial Building is the crowning achievement. It is also inevitable that our thoughts should travel in anticipation along the lines of possible accomplishment offered by the splendid equipment here provided. It is not my purpose, however, to attempt to fill the role of historian or prophet. It is my privilege simply to unite with you all in mutual congratulations and rejoicing and in testifying to our deep appreciation of the opportunities for extended service which have come to us, as well as to our gratitude to the donor of this noble Memorial.

It was my privilege on the occasion of the laying of the corner stone of this building a year ago to be retrospective and to trace the evolution of the Dispensary, the Hospital and the School from their modest beginnings to their then existing state of prosperity and usefulness; also to pay a tribute of admiration and gratitude to the sturdy, independent and efficient pioneers through whose activities, generosity and influence these allied institutions came into existence and developed into the flourishing organizations handed on by them to their successors.

Today, as a participant in these dedicatory exercises, I am honored by being permitted to appear before you as the representative of Boston University School of Medicine, and in this capacity to outline briefly, the *methods* and *purposes* of the modern medical school and the possible relationship of the Robert Dawson Evans Memorial Building for Clinical Research and Preventive Medicine to medical education.

The medical school of today quite as much as any of the institutions of modern civilization must be in sympathetic accord with the spirit of the times, that is, *it must be progressive.* It must hold steadfastly to all that is good in its inheritance, but it must

not allow tradition to interfere with the development of its greatest usefulness or its adaptability to new ideals. It must critically analyze its own experiences and willingly learn the lessons to be taught by those experiences. It must not lose itself in the consideration of subjects of a purely academic nature, but it must be alive to the vital and practical issues of the existing day and generation. Therefore the methods made use of by the best medical school of a generation ago are rapidly being displaced by their offspring. The time devoted to obtaining the medical degree has been lengthened from two to a compulsory four years, and a few of the more fortunate schools, Boston University School of Medicine among them, are offering an elective five years' course. In addition a year's residence in hospital is universally considered almost a necessity.

A generation ago the regular course was considered all-sufficient to equip the graduate for his life work. Today post graduate courses are demanded by physicians who realize their limitations and aspire to keep themselves abreast of advancing knowledge, and such post graduate courses are being inaugurated by all schools fortunate enough to possess the requisite facilities.

A generation ago the general practitioner was considered sufficiently competent to cover the entire field of medical practice. Today in accordance with the law of the division of labor, and with an ever-increasing knowledge, the old-time venerated and autocratic "family doctor" is found chiefly in literature, his place being occupied by *specialists* in diagnosis, in therapeutics, in the eye, the ear, the nose and throat, the heart and lungs, in gynecology, in neurology, in obstetrics, in surgery, in orthopedics, in the skin, in children's diseases, etc., and the medical school that is not equipped to furnish instruction in the *specialties* as well as in the old line subjects must fall behind in the struggle for existence or even retire from the field and leave it to its more favored and progressive rivals.

A generation ago the didactic lecture, text-book recitations and occasional demonstrations and clinics were the chief methods utilized in imparting instruction in things medical. Today these methods are being largely displaced by practical laboratory and bedside or clinical instruction, with a corresponding increase in thoroughness and efficiency.

A generation ago research laboratories for investigation into the mysteries of nature, for the solution of the intricate problems facing the searcher for truth in all departments of Science were few and far between. Today research laboratories and research work are considered indispensible to all institutions of learning, the medical school no less than the more purely scientific and technical schools.

In medicine as in other departments of knowledge it has been demonstrated that in order to give, one must possess; in order to possess, one must acquire; in order to acquire, one must labor in search of; and one must have the facilities needed to critically question and investigate. As if in response to this recognized need research laboratories are springing into existence all over the land.

An incomplete list includes the Rockefeller Institute in New York; the Laboratory for Cancer Research; the Carnegie Institution, the local representative being the Nutrition Laboratory conducted by Dr. Benedict; the forty or fifty United States Experiment Stations where problems in Agricultural and Animal Industry are investigated; the Roosevelt Hospital Research Laboratory; the many Research Laboratories established by industrial concerns, notably the General Electric Company in Schenectady. Only a few days ago my attention was directed to the Wellcome Tropical Research Laboratories connected with the Gordon Memorial College at Khartoum in distant Africa. Our big Universities and educational institutions maintain laboratories where original research may be conducted in Chemistry, in Physics, in Astronomy, in Psychology, in Philology, in Archæology, etc. Biological laboratories in Woods Hole, in Naples, in Bermuda and elsewhere not only annually make their valuable contributions to the sum of human knowledge but furnish invaluable opportunities to teachers who flock thither to acquire in order that they may later impart knowledge to their students.

And today we dedicate the most recent addition to these research institutions, the Robert Dawson Evans Memorial Building for Clinical Research and Preventive Medicine, to perform its double duty of investigating pressing etiological and therapeutic problems for the benefit alike of medical education and the healing of the sick.

The purposes of the modern medical school have expanded synchronously with the expansion of the educational horizon. It is not now considered enough that the physician should be able to make a prescription for his patient. He must become not only a prescriber of medicine, a healer, but an *educator* in all things physical, mental and moral that affect the health and well-being of the community in which he lives and works. Therefore the medical school of today not only aims to furnish thorough and practical instruction in the medical sciences and to train its students in the art of healing, but to supply the laity with physicians who are capable of teaching others how to live so that disease and suffering and unhappiness may be prevented and eventually exterminated.

These ideas, however, are not new. They were clearly and forcefully enunciated over a century ago by Hahnemann, the

Founder of homœopathic practice. His unparalleled insight and foresight were plainly shown in his inimitable work, the "Organon of the Art of Healing." Here he claims that the highest duty of the physician is to restore health to the sick, but he also insists that the physician should distinctly know what is curable in disease in general and in each individual case in particular; that he should clearly comprehend what is curative in drugs in general and in each drug in particular; that he should know in each case the obstacles in the way of recovery and how to remove them; that he should know all the causes that disturb health, that produce and maintain disease, and how to remove them; that he should know the most probable causes of acute and chronic diseases; that he should take into consideration the age and constitution of his patient, the character of his mind and temperament, his occupation, his mode of living, his habits, his social and domestic relations. I know of no writer of Hahnemann's day and generation who so fully realized the importance of psychic influences in the production and cure of diseases as did he. These purposes or ideals then underlie the teachings of the medical school which I am permitted to represent, and "cure,—palliation,—prevention" might be taken as our motto.

Limited time allows me to call attention to only one point in the relationship of this grand memorial building and its purposes to the medical school. It serves structurally as a connecting link between the Medical School, which stands for education, for science, on the one hand, and the Hospital, which stands for the art of healing, for charity and true philanthropy, on the other. The visible bridge and the unseen tunnel symbolize the functional relationship of the three links in the chain of buildings of which this central Memorial building stands for Research, Investigation, Acquisition; the College at one end giving Education, and the Hospital at the other end bestowing Healing:—truly a completed chain or group of which its friends are justified in being proud.

With this growth in facilities new and additional responsibilities and privileges are imposed upon us, but we have nothing to fear as we face the future from the platform of our inheritance.

Development, Progress, the Truth,—these must be our watchwords if we are to do creditable, intelligent, effective and lasting work among the children of men in this changing but continually progressing world.

Well for us if we can assume the mental attitude towards the future so eloquently and beautifully phrased by Edmund Gosse in his verses concerning another subject but eminently appropriate to this occasion:—

"Howe'er it be I will not quail
To tell the lapse of years like sand.
My faith in beauty shall not fail
Because I fail to understand.

New acts, new raptures, new desires
  Will stir the new-born souls of men;
New fingers smite new-fashioned lyres,
  And, oh, may I be listening then!

So if I pray for length of days,
  It is not in the barren pride
That looks behind itself and says
  'The past alone is deified.'

I wait till down the eastern sky
  Muses like Mænads in a throng
Sweep my decayed traditions by
  In startling lays of unknown song."

The invocation was delivered by the Rev. Edward Cummings, pastor of the South Congregational Society.

In the evening Dr. Frank C. Richardson, the Medical Director, gave the following statements of the aims and purposes of the new department:

ADDRESS BY DR. FRANK C. RICHARDSON,

MEDICAL DIRECTOR ROBERT DAWSON EVANS MEMORIAL, Massachusetts Homœopathic Hospital.

The Evans Memorial Department of Clinical Research and Preventive Medicine is now prepared to enter upon the work for which it is designed.

As a fitting memorial to the late Robert Dawson Evans a splendid building has been erected, fully equipped, and presented to the Massachusetts Homœopathic Hospital, under the auspices of which institution its activities will be conducted. The building stands upon land ceded by Boston University for the purpose and is connected by a bridge with the fourth floor of the Medical School building. By provision in the deed of gift its facilities shall always be available for the instructon of students of Boston University School of Medicine.

The function of the building is not confined to that of a hospital proper, but is divided into three different services. On the main floor of the building is a large lecture hall capable of seating about 250 people, in which popular lectures on hygiene and other subjects of importance entering into the every-day life of the people may be delivered. The fourth floor of the building, on the other hand, contains seven large laboratories for special research. In connection with these laboratories the second and third floors are divided into wards and private rooms, in which cases requiring especial study may be cared for. This sums up the various departments incorporated into the buildings, which in construction and equipment should inspire to the best efforts of those who are to work within its walls.

It is related that shortly after Chief Justice Chase had gone for the first time to Washington he was returning to the West. The train stopped at a little station in Virginia and he was informed that it was the birthplace of Patrick Henry. He immediately left the car and stood upon the platform admiring the magnificence of the scenery that opens upon the traveller. He said, "What an atmosphere! What a view! What glorious mountains! No wonder that Patrick Henry grew here." One of the natives, who was standing by his side, quietly replied, "Yes sir, but as far as I have heard, that landscape and those mountains have always been here; but we haven't seen any more Patrick Henrys."

An inspiring environment is not sufficient to insure success. This fact was realized from the first, and the Board of Trustees, keenly alive to its magnificent opportunities for good, have secured for the institution a company of workers who are fully imbued with the profound conviction of its mission and with the obligation to fulfil it.

It would seem that the four elements which Henry Van Dyke claims should enter into good work in literature are especially applicable to good work in an institution of this kind, namely:—

An original impulse,—not necessarily a new idea, but a new sense of the value of an idea.

A first-hand study of the subject and material.

A patient unsparing labor for the perfection of result.

A human aim—to cheer, console, purify, or ennoble the life of the people.

With these essentials in mind the guiding principle of the Evans Memorial staff will be practically the philosophy of Christian Socialism: "From every man according to his ability, to every man according to his need."

From the limitless possibilities for service certain lines of work in the various departments have been selected for present consideration.

In the Pathological Department the great bulk of the work can be classed under the one term: active immunization. With it will also be associated a greater or less amount of study along lines of chemico-therapy as outlined by the German school.

The work with immunization will be practically a continuation and extension of that already started at the Hospital, and will cover many of the various infections and certain phases of cancer. Provision has been made for both house-patients and out-patients. In connection with the clinical room on the first floor it is hoped to establish a valuable out-patient clinic.

In the Chemical Department problems of nutrition, of excretion and particularly of respiration will be carefully worked out,

as well as many others in chemico-pathology and chemico-physiology.

The main feature of the Physiological Department at present will be an extensive piece of research with the electric cardiogram, an apparatus recently brought to a high degree of perfection. Subsidiary studies in blood pressure and other physiological topics will also be followed.

Pharmacological studies may be made to determine the effect of drugs in large and small doses upon the human system, ideal conditions making it possible to have the subjects under proper regime and strictest supervision.

In the Neurological Department it is proposed to devote especial attention to the intricate problems of diagnosis. This to include not only regional diagnosis of the organic nueroses, but also careful study of the psychoneuroses by psycho-analysis, employing when expedient such well-known aids as the word-association test, the time reaction, etc. For this work there has been provided every facility and appliance for the utilization of the most approved methods, and whenever desirable all other departments of the institution are expected to coöperate in the effort to arrive at accurate and trustworthy results.

It is not intended to admit the true psychoses, but such borderline cases as in the opinion of the staff seem suitable may be admitted for purposes of observation and treatment.

Methods of treatment will include psychotherapy, electrotherapy, hydrotherapy, radiotherapy and mechanotherapy, and will enlist the services of trained workers along these lines.

A special subject for research in this department will be the relationship of vasomotor tone to neurasthenia, hysteria and allied conditions, and incidentally the determination of the effect upon blood pressure of electric currents of high and low potential.

It is the belief that education of the people is one of the most important factors in the prevention of disease, and in the Department of Public Education there will be given at frequent intervals popular talks upon topics appertaining to the preservation of mental, moral and physical well-being. These talks are designed primarily for the masses, and in order that they may be productive of greatest good it is expected that the various Settlement Houses of Boston and vicinity will coöperate by sending to selected talks such persons as are most likely to profit thereby, accompanied by an official "worker," who may afterward interpret obscure points, aid in the practical application of the knowledge obtained, and report to the Department the result with suggestions for the improvement of the work.

The following schedule arranged for the month of March, 1912, will serve to illustrate the scope of these talks:—

Evenings at Eight O'Clock.

Tuesday, March 12th.
Sex Hygiene (To girls).
Eliza B. Cahill, M.D.

Thursday, March 14th.
Sex Hygiene (To men).
O. B. Sanders, M.D.

Saturday, March 16th.
Paternity (To men).
John L. Coffin, M.D.

Tuesday, March 19th.
Maternity (To women).
Elizabeth Shaw Ritter, M.D.

Thursday, March 21st.
Tuberculosis (To men and women).
Herbert C. Clapp, M.D.

Saturday, March 23rd.
Fresh Air (To men and women).
Edward E. Allen, M.D.

Tuesday, March 26th.
Dangerous Dirt (To men).
Howard W. Nowell, M.D.

Thursday, March 28th.
Dangerous Dirt (To women).
Susan M. Coffin, M.D.

Saturday, March 30th.
Effects of Alcohol and Tobacco (To men).
Frederick P. Batchelder, M.D.

These talks will be illustrated by aid of the stereopticon whenever desirable.

Among additional topics which it is proposed to consider during the coming months may be mentioned: Industrial Hygiene, Public Sources of Contagion, Home Nursing, "First Aid" in Emergencies, Food Values, Care of the Teeth, Care of the Eyes, Care of the Skin, How to be Sane and Steady, Care of Babies.

Arrangements for the following lectures also are being perfected: Six lectures to physicians and medical students on "The Relationship of the Medical Profession to the Community," six

lectures to teachers on "Problems of Adolescence," three lectures on "The Importance of Right Thinking."

The dates upon which these subjects will be presented will be announced as soon as definitely fixed.

Such are some of the aims and purposes of this new department, but of perhaps far greater importance is the hope that such work as may be done here will stimulate the members of our profession to cultivate a wider range of thought and activity, and imbue them with a scientific spirit which will insure a cordial relationship with all their fellows. If we seek for some underlying quality by which to characterize the years last passed, we find nothing more marked than the tendency toward expansion of things which were once narrow, and consolidation of things which were once separated. Nowhere is this widening and consolidating activity more manifest than in modern medicine.

The medical profession has attained to a broader conception of its relation to the conservation of human life.

The growing realization of the added duty of the physician to prevent disease is rapidly bringing together those whom the single devotion to curative medicine had tended to keep apart.

One aim of our new institution shall be to foster this synthetic process and to inculcate the principle that our grand humanitarian service should be untrammelled by sectarian prejudice.

We enter upon our work with full appreciation of our limitations, but with faith that zeal will compensate for many shortcomings and enable us to contribute something to the accomplishment of Scientific Medicine in the relief of human suffering and the prolongation of human life.

"When one is climbing a mountain whose lofty peak he has long admired from a distance there is an arduous ascent and one with many steps to be made; but how good and wholesome is the way! The path which winds through grassy meadows, the bridge which crosses the rushing stream pouring down from the heights, the slow and toilful ascent, repaid by the purer air and the rarer flowers and the wider vision over obstacles, and then, at last, the height itself, different from the rest only in this, that it is the culmination! There can be no Parnassus without the steps that lead to it."

Dr. Walter B. Cannon, representing Physiology, spoke of the scope of Physiological Research and the possibilities that were in store for the new laboratory.

Dr. Frank B. Mallory, speaking for Pathology, congratulated the School and the Hospital upon the new acquisition, stating that the inter-relation of the two thus bound together by the research department was a gratifying condition found in but very few of the

American medical centres. He strongly urged co-operation, and spoke well concerning the possibilities in pathological studies. Dr. Timothy Leary expressed his cordial envy at the opportunities which seem to be in store for the staff of the Research Department.

The aspect of Neurology was ably covered by Dr. James J. Putnam, who manifested his particular interest in the questions Psycho-Analysis of Psycho-Neuroses.

Dr. Elmer E. Southard represented the department of Neuro-Pathology and gave an able address upon "The Relation Between Homœopathy Past and Present, and Modern Research."

For the departments of Public Education and Preventive Medicine interesting addresses were delivered by Professor George G. Wilson, Robert A. Woods, Meyer Bloomfield, and Charles W. Birtwell, all emphasizing the possibilities of the department and the needs of the city in their respective lines.

The entire building was open for inspection from Wednesday to Saturday and was visited by large numbers of people interested in the work.

A description of the building as given by the architects is as follows:

DESCRIPTION OF THE ROBERT DAWSON EVANS MEMORIAL BUILDING.

The latest addition to the group of buildings comprising the Massachusetts Homœopathic Hospital at Harrison Avenue and East Concord Street is the Robert Dawson Evans Memorial Building. This building is erected by Mrs. Evans to the memory of her husband.

The function of the building is not confined to that of a hospital proper, but is divided into three different services. On the main floor of the building is a large lecture hall capable of seating about 250 people, in which popular lectures on hygiene and other subjects of importance entering into the every-day life of the people will be delivered. The fourth floor of the building, on the other hand, contains seven large laboratories for special research. In connection with these laboratories the second and third floor is divided into wards and private rooms, in which the cases requiring especial study are to be confined. This sums up the various departments incorporated into the building.

The design of the building follows a very simple brick treatment, in which the predominating details are largely Greek in character. The flat front is relieved at its base by a highly carved Greek doorway, and broken up above the cornice level by a pergola flanked by two solaria. This latter feature enables the patients to

Evans Memorial Building

LABORATORY

find in bad weather an outdoor covered logia, from which they can be wheeled onto the open pergola when the weather permits. This upper level is reached by an elevator, which makes it possible for the patients to be wheeled there direct from their rooms. At the rear the building is connected with the Boston University School of Medicine by means of a covered passageway at the fourth floor level. This passage leads direct into the museum and laboratories, which are at present installed on the upper floor of the College building.

The exterior trimmings of the building are Indiana limestone, while the brick surfaces have been treated in various places in patterns, which give a certain play and texture to the surfaces. The interior of the hospital is finished in the most up-to-date way and with all of the details known to modern construction for the elimination of interior angles. The floors throughout the corridors are of ceramic tile with sanitary bases flush with the plaster walls. This applies also to the laboratories and all of the toilet and service rooms. The wards and private rooms are floored with linoleum, which is aligned at the walls with a composition sanitary base, which in turn aligns with the plaster work. The walls of toilets and other service rooms are of a pink Tennessee marble. The iron work of the staircases, the treads, the window sills, and all window and door finish have been designed without moulding of any sort, and all interior angles are rounded. The interior doors are of oak veneered, the surfaces being absolutely smooth, without panel work of any kind.

The only ornamentation in the building is found in the entrance hall and in the large lecture room, where the Greek style has been very carefully carried out. The lecture hall has a sloping floor down to a proscenium raised three steps above the main floor, and flanked on either side by Grecian columns and niches. Grecian pilasters support the heavy beams of the ceiling at both side walls, the beams themselves being highly ornamented with Grecian detail. The lighting of this room is indirect, placed on the side of the beams toward the speaker. The speaker's platform will be without furniture of any sort with the exception of a small reading desk designed in the form of a Grecian altar. This room is finished in delicate grays and the whole effect is dignified and impressive, producing an atmosphere well calculated to aid the speaker in influencing his audience on such subjects as will be here treated.

In the basement is the Hydrotherapeutic Ward, furnished with all the latest appliances in that branch of medical science. There are also machinery rooms, incinerator rooms, sterilizing rooms, locker rooms for servants, and the other service rooms necessary in connection with a building of this nature. The build-

Hall

ing at this level is connected with the main hospital by means of a tunnel running underneath the hospital yard, so that food and other supplies can be brought direct from the main building, thereby eliminating the necessity of separate kitchens and other services of like nature.

On the ground floor will be provided an attractive auditorium, capable of seating about two hundred and fifty people, where it is intended to have given popular talks upon subjects affecting the physical and moral welfare of the individual and the community. Here too, patients, carefully divided into classes according to their physical or mental needs, may meet for instruction in the proper interpretation of their various symptoms and the self-correction of errors of living and thinking. In this way psychotherapy can be productive of best results because its sophistries will be controlled by the rectification of scientific reasoning.

In addition to the lecture hall on the first story are several offices and examination rooms. As stated above, the second and third floors are fitted up as a hospital proper in the most up-to-date manner. The second floor is to be given up largely to patients suffering from the various neuroses, which class of cases has not hitherto been provided for in our hospital. These floors contain in both cases seven large private rooms, four of which have private baths. Each floor has also a large ward for four beds with public toilet, and accommodations for three resident nurses with bathroom. In addition to the patients' and nurses' rooms are large service and duty rooms, linen rooms, drying closets, medical storage rooms, and like services. On the fourth floor, in addition to the laboratories, are two rooms for internes and large locker rooms with toilets and baths for the doctors who will make use of the laboratory space.

The most modern system of heating and ventilating has been employed, and the electric bells, call systems and other adjuncts of a thoroughly modern hospital have been installed. The Massachusetts Homœopathic Hospital now has a building equal to the best in this country, and will be enabled to extend its influences in many directions by reason of this new and up-to-date addition to its resources.

PLANS AND PURPOSES OF THE ROBERT DAWSON EVANS MEMORIAL FOR CLINICAL RESEARCH AND PREVENTIVE MEDICINE.

The Massachusetts Homœopathic Hospital desires to announce to the public and to the medical profession the opening of its new department of clinical research and preventive medicine constituting the Evans Memorial, and to detail the aims and purposes of the institution. At the same time it requests from the

profession and from the public cordial co-operation, as without this the fullest degree of success cannot be attained.

As at present arranged the work is essentially divided into two parts: one strictly medical, the other that of public education. The activities of the entire institution will be under the supervision of the Medical Director, Dr. Frank C. Richardson.

1. *Medical.* Work in this line centres about the laboratories. Of these there are five: neurological, chemical, physiological, pathological (including bacteriological) and pharmacodynamical. The rooms for these departments occupy the fourth floor. Closely associated with them are wards and private rooms for the proper care of those who are under treatment or observation. These occupy the entire second and third floors.

Purposes of Departments

(1) *Neurological:* Edward P. Colby, M. D.; Ernest M. Jordan, M. D.; Frank C. Richardson, M. D.; Arthur H. Ring, M. D.; Alberta S. Boomhower-Guibord, M. D.

In the Neurological Department it is proposed to devote especial attention to the intricate problems of diagnosis. This to include not only regional diagnosis of the organic neuroses, but also careful study of the psychoneuroses by psycho-analysis, employing when expedient such well-known aids as the mind association test, the time reaction, etc. For this work there has been provided every facility and appliance for the utilization of the most approved methods, and whenever desirable all other departments of the institution are expected to co-operate in the effort to arrive at accurate and trustworthy results.

It is not intended to admit the true psychoses, but such border-line cases as in the opinion of the staff seem suitable may be admitted for purposes of observation and treatment.

Methods of treatment will include psychotherapy, electrotherapy, hydrotherapy, radiotherapy and mechanotherapy, and will enlist the services of trained workers along their lines.

A special subject for research in this department will be the relationship of vasomotor tone to neurasthenia, hysteria and allied conditions, and incidentally the determination of the effect upon blood pressures of electric currents of high and low potential.

List of Appropriate Cases.

Neurasthenia.
Hysteria.
Neuritis.
Epilepsy (Idiopathic and cortical).
Chorea.
Brain and cord diseases, including localization.

Poliomyelitis not requiring surgical interference alone, including

Motor paralysis.

Inflammatory diseases of the meninges except epidemic cerebro-spinal.

Erythromelalgia and angioneurotic œdema.

Bell's palsy.

Grave's disease.

(2) *Chemical.* Director, Allan Winter Rowe, M. S., Ph. D.

Problems of nutrition, of excretion and particularly of respiration will be carefully worked out, as well as many others in chemico-pathology and chemico-physiology.

(3) *Physiological:* Director, Arthur W. Weysse, Ph. D., M. D.

The main feature of this department at present will be an extensive piece of research with the electric cardiogram, an apparatus recently brought to a high degree of perfection. Subsidiary studies in blood pressure and other physiological topics will also be followed.

(4) *Pathological:* Director, William H. Watters, Ph. D., M. D.

The great bulk of this work can be classed under the one term: active immunization. With it will also be associated a greater or less amount of study along lines of chemico-therapy as outlined by the German school.

The work with immunization will be practically a continuation and extension of that already started at the Hospital, and will cover many of the various infections and certain phases of cancer. Provision has been made for both house-patients and out-patients. In connection with the clinical room on the first floor it is hoped to establish a valuable out-patient clinic. The following are some of the diseases appropriate for the department.

Cancer, not including inoperable or hopeless cases. Cases desired early and preferably operated on in the hospital when fresh tissue can be obtained; at first, house-patients, later out-patients.

Typhoid fever. Immunization — Out-patients.
Therapeutic treatment — House-patients.

Pneumonia. House-patients.

Tuberculosis (pulmonary or otherwise). Out-patients; a few house-patients,

Erysipelas. House-patients.

Puerperal sepsis. House-patients.

Scarlet fever. Immunization. Out-patients.

Infectious arthritis — rheumatism. Out-patients and house-patients.

Septic infections of various sorts. Out-patients and house-patients. These may include furunculosis, carbuncle, abscess, acne, pyorrhœa alveolaris, otitis, bronchitis, enteritis, empyema, peritonitis, pyelitis, cystitis, etc.

All of these cases will receive the best general treatment for their particular condition, surgical, medical or otherwise, and will in addition be given whatever vaccine or other preparation is indicated in each particular instance. A consulting Medical Board will always be available and the individual members will co-operate with members of the Staff in daily or periodic visits.

(5) *Pharmaco-dynamical.* Walter Wesselhoeft, M. D.; John P. Sutherland, M. D.; Howard P. Bellows, M. D.; Frederick B. Percy, M. D.; J. Wilkinson Clapp, M. D.

Here drugs and drug effects will be carefully studied and the results recorded. Exact details have not as yet been definitely settled. The staff will make arrangements for treatment as seems advisable. Some free beds are provided for those wholly unable to pay. For others, more fortunate, accommodations are available from fourteen dollars per week up. Several private suites with room for nurse and private bath are also provided.

Decision concerning the suitability of prospective patients rests with the Medical Director, Dr. Frank C. Richardson, and with the members of the Staff. In Pathology arrangements for out-patients and appointments for examination and treatment may be made with the Director of the Laboratory, Dr. W. H. Watters.

The dedication of this new department opens a new era for the Massachusetts Homœopathic Hospital and one in which it is sincerely hoped much work of advantage to the profession, and to the world at large, will follow. The institution bespeaks the interested assistance of the medical profession and the many friends of the Hospital.

THE PRESENT STATUS OF THE USE OF DRUGS IN TREATING DISEASE.*

By Samuel H. Spalding, M. D., Hingham, Mass.

In reviewing the work of our society for the past year I have been impressed with the knowledge that we have had rather too little in the way of papers and discussion on the use of drugs. I find in past presidential addresses indications of similar discov-

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* Presidential address read before the Boston district of the Massachusetts Homœopathic Medical Society at its annual meeting, January 4, 1912.

eries. Also in reading medical magazines one has to admit that articles on treatment by drugs are rather rare.

The questions that come to mind are many. Are the medical men of the present as interested in the subject of curing disease by drugs as the practitioners of fifteen or twenty years ago? Has medical nihilism, as Dr. H. R. Arndt, the Field Secretary of the American Institute, calls it, invaded the homœopathic as well as the regular school? And what are the reasons?

I do not think it would be possible to answer these questions in a short address, A long one would leave much unanswered, and might bore you all.

Of course, one very good answer to the first and last questions lies in the great interest in, and knowledge of the cause and prevention of disease. When I began the study of medicine, thirty years ago, there were just two diseases whose bacterial cause had been proven, anthrax and relapsing fever. Today the number is about thirty. With that increase in knowledge has come the discovery of some of the causes of immunity, and of ways to bring about immunity both in the well and in those whose bodies have been invaded. Serum-therapy has taken away our interest in the use of drugs in an increasing number of diseases.

Another answer to the same question is in the advances made in surgery acute appendicitis, pelvic abscess, gall stones, catarrh, are a few only of the pathological conditions which come under or call for surgical treatment. We who were treating cases of acute appendicitis by materia medica twenty years ago can not begin to tell the present generation of practitioners all the anxiety of weeks and sometimes months duration those cases involved. We studied and studied the complex of symptoms to find the indicated remedy. When we finally won out, if we did, and had our patient in a more or less satisfactory state of health, and very grateful withal, you may believe we drew a long breath of relief if there were not already another case of the same kind on our hands, new complications and all. Today I can never get over the wonder and thankfulness for my patient's sake, as well as for my own, when in three or four hours I can have the offending part removed and my patient on the fairly sure road to that speedy, gentle and permanent recovery which Hahnemann insists is our highest aim.

In one of the latest standard works on modern treatment, (Hare's) 500 pages out of 1900 are devoted to "treatment other than medicinal." In a similar work of 3600 pages, written and edited in 1891, by the same man, 400 pages are given to the then known methods of treating disease other than medicinal. That is, in the modern treatise one-third the space, in the older work

one-ninth was devoted to treatment of disease other than by drugs.

In a rough way this may show a reason for decreasing interest in medicines. But are we to think that the use of materia medica is becoming a thing of the past? The study of prevention, vaccines, bactericides, hygiene, etc., has brought us great aid in overcoming disease. Surgery has wonderful achievements in its constantly extending field, but, I believe that drug therapy is yet to come to its own as a scientific force. The actual proof is only a matter of more research. Gradually out of the mists of what is unproven are coming means of actually demonstrating something of the favorable effects of our medicines.

Already the homœopathic system of selection has had confirmation in the proving that phosphorus has the power of raising the opsonic index to tuberculosis. The proven action of vaccines follows out the principle of the law of similars.

Our new laboratory for clinical research will give means to follow out these indications. With scientific proof to the value of drugs in disease the subject will become more interesting, more papers on drug therapy will be read in our meetings and printed in our journals. I believe also the Law of Similars is to have a scientific demonstration. When we can stand up and show the world just how and why a drug cures a disease, the use of materia medica will become a science instead of an art.

THE TREATMENT OF DYSMENORRHEA BY UTERINE DILATATION.

By Clarence Crane, M. D., Boston, Mass.

Many women are silently suffering each month with the return of the menstrual function and look with dread upon the recurrence of this period. Others are unable to hide their sufferings. Some are incapacitated for a number of days each month. They are compelled to seek their beds during this time and are a greater part of the intermenstrual period in recovering from the disturbance. Aid is sought from many sources. Quack medicines are far too frequently resorted to, the patient being attracted by the promises of advertisements which are spread broadcast.

Another situation which arises as a result of this period of frequently recurring suffering is that the sufferer acquires one or another of the drug habits. As the use of alcohol is of common occurrence, habits of alcoholism are frequently begun. While of all drugs alcohol is the most easily obtained, opium and many other narcotics are also widely used. The use of such drugs in a condition of this kind is especially deplorable because of the periodicity and necessarily increasing doses. It should be the

practice of every physician to absolutely refrain from prescribing sedative drugs for the relief of menstrual colic, for once the patient learns of the temporary relief afforded, she will most naturally seek similar aid the next month. The true physician looks further than the mere palliation of such a condition. The aim should be to discover and remove the cause. This is not an easy matter.

For the so-called neuralgic dysmenorrhea of certain neurotic patients, treatment other than surgical is necessary. There is a vast number of sufferers who owe their pain to various types of pelvic pathology such as flexions of the uterus, displacements, uterine tumors and inflammatory processes involving the endometrium, metrium and the uterine appendages. These conditions may generally be demonstrated by pelvic examination and should receive suitable surgical treatment. This will, in nearly all cases, consist of some kind of plastic work on the pelvic organs.

The purpose of this paper is to direct attention to those cases of dysmenorrhea which do not come under the two above groups, to cases where persistent dysmenorrhea occurs in the presence of such pathology as infantile uterus, pinhole os, contracted internal os and slight degrees of flexion. There may be no pathology evident and yet the symptoms may persist. There is a condition suggestive of obstruction. The result of the old controversy, as to whether dysmenorrhea is obstructive or not, matters little to the patient. Much has been said on both sides of the question. The fact remains that, in this third group of cases, thorough uterine dilatation relieves the majority.

We must remember that dysmenorrhea is far more frequent in the nulliparous woman than in the woman who has borne children. It seems reasonable to assume that the parous woman is less frequently the victim of dysmenorrhea because of the thorough stretching of the uterus occurring during parturition. This would argue that dysmenorrhea, from obstruction, is more common than the other types. If this be true, are we not right in anticipating relief from proper surgical measures, producing the results like those following normal labor? Therefore, on those cases of dysmenorrhea not presenting marked nervous symptoms, there being no pathology indicating some other operation and where medical treatment has failed to relieve, a thorough dilatation of the uterine canal should be made.

The choice of methods is the so-called rapid dilatation instead of the gradual method. The procedure is carried out as a strictly aseptic surgical one. As has been suggested, we should endeavor to imitate nature in the normal stretching that occurs in pregnancy. It is undoubtedly best, for the patient and the operator,

that a general anæsthetic be used, because under the complete relaxation, secured by general anæsthesia, the desirable degree of stretching may be obtained.

The proper amount of dilatation is best secured by using graduated metal dilators of the Hegar type. It is essential that the fibres of the whole uterine canal, and especially those of the internal os, should be so stretched and ruptured that the contraction of uterine muscle cannot produce the condition of partial obstruction. The anterior and posterior lips of the cervix should be grasped with the cervix forceps, for, in inserting the dilators, a considerable amount of traction will be made and, unless care is used, the forceps may tear through the cervix. Beginning with the smallest size, the dilators are passed in successive sizes until a sufficient amount of dilation is secured. This is determined by the feeling of resistance to the insertion of the dilator. The middle sizes will be forced through the contracted canal with difficulty, but when a certain size is reached the fibres of the internal os will rupture and the larger sizes will readily enter the whole length of the uterine canal. It might almost be laid down as a rule, to stop dilating when the largest dilator used enters the uterine canal as easily as the first one.

In most cases the uterus need not be curetted, and generally there will be but a slight amount of hemorrhage at the time of the operation. For five or six days there will be a small amount of flowing. The patient should remain in bed for about a week or, at any rate, until all flowing has subsided. There is usually no post-operative discomfort. The operation is a comparatively simple one and carries with it but a small amount of danger. The results, on the other hand, are often most marked.

It is true that dilatation is not a cure-all for every case of dysmenorrhea. A few of these cases may show no improvement. However, by far the larger number of cases of persistent dysmenorrhea treated by thorough dilatation will show either a marked improvement or complete relief. In view of this fact it would seem that, when dysmenorrhea continues month after month to resist remedial treatment, thorough dilatation is indicated.

A STATISTICAL CONSIDERATION OF HOSPITALS LOCATED IN BOSTON.

By Harry J. Lee, M. D., Boston, Mass.

In the city of Boston are several large general hospitals receiving their clientele largely from the eastern half of Massachusetts. The statistical study of these institutions gives, with a considerable degree of accuracy, information in regard to the pre-

vailing diseases in this locality, as well as a better defined acquaintance with the work of the individual institutions.

Such classification exists in the annual reports of these hospitals that the number of patients treated and the classification into groups of diseases may be easily made.

The widely varying conditions and classes of patients treated in the different Boston hospitals makes it impossible with fairness to compare the results obtained in any particular institution with those obtained in any other institution.

Though it would be interesting, it is obviously impossible to learn the ratio of patients treated in these hospitals to those treated at home. No effort is made to learn the number of patients cared for at home in any but transmissible diseases, but it is safe to assume that a considerable part of the ill in distinction from the ailing are cared for by institutions whose statistics are obtainable.

The total number of patients cared for during the year 1909 in institutions in Boston treating acute diseases was 45,074 as bed patients and 181,640 as out-patients, in the following hospitals: Boston City, Massachusetts General, Massachusetts Homœopathic, Carney, Boston Dispensary, Massachusetts Charitable Eye and Ear Infirmary, Children's Hospital, Mt. Sinai Hospital, New England Hospital, Boston Lying-in Hospital, Boston Floating Hospital, and Boston Consumptives' Hospital Department.

It is significant that of this number of patients cared for during this year (1909) 9.11 per cent of all bed patients and 15.09 per cent of all out-patients were treated at the Massachusetts Homœopathic Hospital.

There are four large general hospitals in Boston having an out-patient department. They are the Boston City Hospital, Massachusetts General Hospital, Massachusetts Homœopathic Hospital, and Carney Hospital. During the year 1910 these hospitals treated the following number of patients: —

	Bed Patients	Out-Patients
Boston City Hospital	13,859	40,032
Massachusetts General Hospital	6,392	22,302
Massachusetts Homœopathic Hospital	4,924	12,036
Carney Hospital	3,680	45,399

A relatively large proportion of the patients treated in all four of these hospitals are surgical. There are several reasons for this condition. Economic conditions demand the shortest detention from working and earning time, and surgery holds out inducements, in points of time, in the treatment of many conditions which slower and less certain methods cannot promise. Lack

of facility for the care of surgical conditions at home and distrust of the ability of the local medical men in surgical matters in part accounts for this disproportion.

In the following table the total number of bed patients treated is divided into four classifications. In several of the hospitals considered such other divisions is made of the cases treated (as into gynæcological, nervous, etc.) as to detract from the value of this table in a comparison. The figures in parentheses are the percentages of the whole number treated: —

	Medical	Surgical	Contagious	
	Per Cent.	Per Cent	Per Cent.	Per Cent.
Boston City Hospital......	3,875 (27.9)	4,456 (32.1)	3,025 (20.9)	....
Massachusetts General Hospital..........	2,159 (32.2)	3,933 (61.5)	... .	....
Massachusetts Homœopathic Hospital.......	491 (9.9)	3,038 (61.5)	483 (9.8)	568 (11.1)
Carney Hospital...........	529 (14.3)	2,295 (62.0)	....	37 (1.0)

A constant increase in the number of bed patients treated is evident in these four hospitals, each year adding as the facilities at the disposal of the hospitals increase. The number of patients in the out-patient reports indicates the effort to restrict free treatment to those who are unable to pay physicians' fees. This effort to correct the abuse of out-patient clinics by those able to provide themselves with the services of a physician shows a diminution in the number treated in the out-patient departments in two of the four hospitals during the past five years.

The greater number of the patients considered under the same conditions the more accurate are likely to be the inferences drawn from the statistics regarding these patients.

Varying conditions in different hospitals in regard to the diagnosis and methods of tabulation of diseases make it desirable to take into consideration as large a number as possible from one hospital. This we will do as taken from the medical and surgical reports for a period of five years, 1906 to 1910 inclusive, at Massachusetts Homœopathic Hospital: —

	1906	1907	1908	1909	1910	Total
Number of Medical Cases Treated	586	733	653	518	491	2,981
Number of Surgical Cases.... ...	2724	2707	2737	2961	3038	14,167
Number of Maternity Cases......	423	453	441	518	568	2,403
(Deliveries)	424	462	448	......	582	..... .
Number of Contagious Cases.....	.....	.....	216	476	483	....

Omitting contagious cases cared for, the ratio of cases at Massachusetts Homœopathic Hospital for this period of five years is: Surgical — 72.41 per cent; medical cases, 15.24 per cent; maternity cases, 12.28 per cent. The medical reports give for this

period the following classification: Infectious — number treated, 761; proportion to total treated, 25.52 per cent. Gastro-intestinal, number treated, 471; proportion to total treated, 13.99 per cent. Respiratory, number treated, 378; proportion to total treated, 12.67 per cent. Nervous, number treated, 357; proportion to total treated, 11.97 per cent. Constitutional, number treated, 320; proportion to total treated, 10.73 per cent. Genito-urinary, number treated, 242; proportion to total treated, 8.11 per cent. Circulatory, number treated, 174; proportion to total treated, 5.83 per cent. Intoxications, number treated, 94; proportion to total treated 3.15 per cent. The surgical reports for a period of four years, 1907 to 1910 inclusive, may be condensed into the following classification: —

	1907	1908	1909	1910
Diseases of the Alimentary Canal. Including lips, mouth, œsophagus, stomach, intestine (excepting appendix), anus, rectum	235	177	202	200
Diseases of liver, gall bladder, pancreas	57	44	42	42
Disease of Appendix	260	253	283	279
Diseases of Urinary Tract. Including kidney, ureter, bladder	46	44	48	59
Diseases of Male Genitalia. Including testicle, scrotum, penis, urethra, prostate	96	91	92	99
Diseases of Female Genitalia. Including vulva, vagina, uterus, tubes, ovaries	490	494	602	502
Diseases of Respiratory Tract.				
Nose and throat	628	652	680	739
Lungs and pluræ	8	18	25	13
Diseases and injuries of Trunk. Including herniæ	217	211	278	300
Diseases and Injuries of the Upper Extremity	122	123	162	137
Diseases and Injuries of the Lower Extremity	148	165	183	202
Diseases of the Eye	120	119	119	134
Diseases of the Ear	52	54	55	58
Diseases of the Circulatory System, Skin, General Diseases and those unclassified and undiagnosed	228	312	190	274
Total number of Surgical Cases	2707	2737	2961	3038

It is observable that the fluctuation from year to year in this classification of surgical conditions is small. The greatest yearly fluctuation is in diseases of the lungs and pluræ, of which there was the smallest number treated, and the least yearly fluctuation being in the diseases of the eye and ear.

RULES TO BE OBSERVED BY THE PATIENT IN THE PROPER TREATMENT OF CONSTIPATION.

By Benj. C. Woodbury, Jr., M. D., Portsmouth, N. H.

Rule I. *Promise your physician and your better self that you will most assiduously avoid contracting the cathartic habit;* that, if now taking crude drugs in any form or under whatsoever name (be it laxative, cathartic, purgative, or the so-called simple or harmless aperient) you will absolutely and unconditionally eschew this habit. Enemata are much less harmful, when immediate results are required, but first consult the physician.

Rule II. *You will carefully set a certain hour of the day,* the best from the physiological standpoint being in the morning either before or after breakfast, for the *successful* performance of this most important of all functions. Do not limit your time to the conventional or even casual three to five minutes, but bear in mind, as a recent writer has emphasized (Dr. A. H. Ring, *New England Medical Gazette*), that for the elimination of the system's waste products no less than twenty minutes, if necessary, should be allowed; for who can conscientiously shirk this important duty, when we consider that at least one and one half hours of the day are spent (or should be) at table, for the proper intake of food?

It has long been held that in constipation lies the cause of the greater part of human ills. If this be true, equally deplorable is the opinion held that its cure lies in the use of laxative medicines or any form of crude drugs. The remedy is, in the majority of instances, far worse than the disease; for in nine cases out of every ten no real disease-constipation exists, it being but a single symptom of functional or organic disorder. It is in fact, in most cases, but a simple indigestion at its inception or a stagnation of the biliary or other intestinal secretions which furnish the natural stimulus to peristalsis, the involuntary, rhythmical movements of the intestines. Its cause is chiefly *overeating,* that is, loading the system with food products faster than they can be absorbed, thus paralyzing the function of the liver and other secreting glands, and the lacteals, which are the natural absorbents. Its cure is as commonplace as its cause and lies simply and solely in *fasting until the bowels can resume their proper function.*

Rule III. *Drink from one and one half to two quarts of pure water daily,* preferably, *in constipation, cold;* otherwise hot may be advisable: and observe most carefully the advice of the physician in regard to diet. It is best to drink at *least one glass of cold water in the morning on rising, also the same amount between each meal and on going to bed; the last to be sipped very slowly, from ten to fifteen*

minutes being allowed for its consumption. Avoid stimulants and tea or coffee, unless otherwise advised by the physician.

RULE IV. *Exercise freely in the open air,* and in this way make your intestinal sluggishness subservient to increased bodily activity, — with its surplus of pure, well-oxygenated blood. Avoid as far as possible sedentary habits.

RULE V. *Do not fear auto-intoxication,* of which there has been so much said in recent years; there is by far less danger of absorption of effete products from an intestinal tract that is too torpid to properly digest food, than from overeating and all its attending dangers. Such a condition as "self poisoning" cannot exist if the bowels are moving freely and naturally. *Have no fear if the bowels do not move every day; there will be no absorption from a healthy intestinal mucous membrane,* for the latter, especially in its lower part, is *practically non-absorptive* except under certain conditions. The dangers in this regard are those resulting from forced absorption of partially digested substances, which poison the nerve centers and paralyze metabolism, *most of which may take place outside the intestinal tract.*

Water drinking and avoidance of "opening medicines," will likewise give the kidney its proper functional activity, which is most important from the standpoint of elimination, and it will not wear itself out from overwork, in doing double duty, or suffer from disuse, the result of the cathartic habit.

RULE VI. *Masticate thoroughly all food,* especially such as requires the action of the saliva in digestion.

RULE VII. *Avoid overeating.*

RULE VIII. *Cultivate a cheerful mental attitude;* be not all the time worrying about the condition of the bowels and wondering whether or not they will move to-morrow. This only anticipates the normal evacuation and in consequence, postpones its proper performance. Above all things do not worry other people with such matters.

RULE IX. *Avoid as much as possible the expulsive effort;* this will be difficult of accomplishment at first, but will become easier as conditions improve.

RULE X. *Above all else, free your mind of all morbid cravings for excesses in eating and drinking;* this will go a long way toward the attainment of mental, moral and physical poise, and be the first step toward constructive nutrition.

RULE XI. *Do not forget that all conditions of true (chronic) constipation,* aside from certain structural changes abnormalities leading to mechanical obstruction, *originate within the economy,* and their treatment should be directed toward *causation* rather than palliation. Their cure will depend upon most carefully pres-

scribed diet and medicines which affect the organism as a whole, not acting upon a single locality.

RULE XII. *Avoid the use of strong drugs.* All such lead to the same end, a chronic drug habit which is often more difficult to cure than the original affection. Properly prescribed homœopathic remedies, on the other hand, assist Nature in her efforts to cure, acting upon the system as a whole, and, together with proper dietetic regime, will accomplish everything necessary for a lasting cure.

DIVISION OF FEES.

The Toronto Academy of Medicine recently passed the following resolution concerning this much debated topic:

"(a) That the secret division of a fee, or fees, with any person or persons, who may be instrumental in influencing a patient, or patients, to apply for operative care or professional advice, is unworthy of any member of the medical profession.

(b) That if such division of fee is made by a member of the Academy of Medicine, Toronto, it should be counted as sufficient ground for the expulsion of the member.

(c) That it shall be the duty of the Council of the Academy to investigate charges against members made on the basis of such division of fee; and on proof of offense the Council may either permit the resignation of the person or expel him from the Academy."

TREATMENT OF LOBAR PNEUMONIA.

From an article by Nammack in the Medical Record the following abstracts are taken expressive of his belief:

"The sick room should be well lighted, and solicitous ignorance on the part of relations should not stand in the way of the unlimited admission of free, fresh, flowing air. It seems to me, however, that we have been carried away by the glowing accounts of succcess in pneumonia by putting patients out on balconies and roofs. Pure air at a temperature of 65 degrees F. has always satisfied me, with the exclusion of visitors and of the consideration of any business matter.

"I endeavor to have an accurate blood count made, including a differential enumeration of the leucocytes, and to have a thorough uranalysis done. A daily blood chart thereafter, with a daily examination of a twenty-four hours' specimen of urine, will keep us alert for complications. A comparison of the blood pressure with the pulse rate will also give us valuable prognostic and therapeutic indications. If the pulse rate is less than the blood-pressure reading the patient is doing very well.

"The fever in pneumonia causes the relatives, and sometimes the attending physician, a great deal of unnecessary anxiety. Fever is a specific reaction against injurious materials which affect the tissues, and is, in its essentials, a protective reaction. Accepting this definition, fever requires no interference unless it becomes high enough to add to the poisoning of the vital centers. A temperature of 104 degrees F., associated with a moderate leucocyte count, with a blood pressure which is higher in the manometer reading than the pulse rate, and with clear heart sounds, gives a better outlook than does a temperature of 102 degrees F., with a low leucocyte reaction with low systolic arterial pressure, and a muffled first sound with a pulse of 120. Hyperpyrexia, however, indicates danger, and should be promptly met by the application of cold compresses, cold sponging, and ice bags to the chest."

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M. D.

Case 2.-C—Diagnosis: Apoplexy.

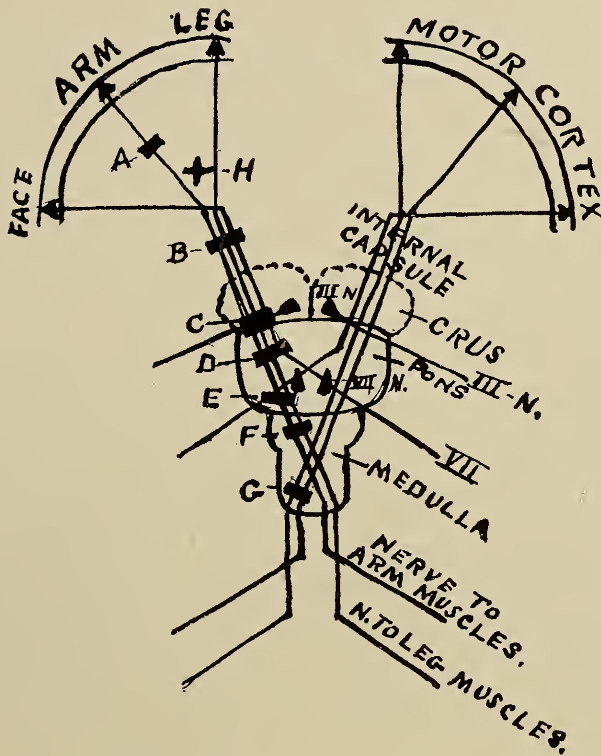
Thus far the diagnosis is not difficult to guess, but when we ask the cause, — whether due to hemorrhage, thrombosis or embolism, and the location of the lesion, we at once enter into more difficult and interesting questions. Tumor or abscess might be thought of, but the fact that there has been a marked improvement and no headache, vertigo, vomiting or temperature rather rules them out.

There is in favor of hemorrhage the fact that the patient had overworked the day before and on the day of the shock; hence her circulation was probably pretty tense; she had also just eaten a Thanksgiving dinner which might further raise the blood pressure. Her age is just where it cannot assist in a diagnosis. Thrombus and embolus, i. e., acute softening, may occur before fifty, while hemorrhage is more likely to occur after fifty. The patient's mother died at eighty after four shocks, and it is safe to assume that they were the result of ruptured blood vessels.

Against hemorrhage is the absence of any blood dyscrasias, also the fact that there were no premonitory signs, no slight vertigo, no tingling, no disturbance of feelings which for a few hours or a day or two so commonly precede the rupture of a cerebral vessel; neither was there any entire loss of consciousness at first, which in hemorrhage is almost constant. The attack came on suddenly and consisted of a few moments of feeling queer and turning pale, with possibly some transient thick speech followed by three weeks of mental instability, restlessness and some stupor, with steady improvement; then suddenly the patient's left hand got blue and cold and the patient sank into a state of coma. There had been a long history of semi-invalidism and dyspepsia, which suggested the possibility of chronic endocarditis, but of this there is no evidence, but a small embolus is to be strongly thought of.

Against thrombus is the absence of syphilitic taint, gout, lead or evident arterial disease, still it is impossible to differentiate embolus or thrombus.

The mental disturbance though now much cleared up, still persists, in that at one moment the patient thinks herself at home and the next knows better; this shows that the lesion which has resulted in some softening, is pretty well up towards the cortex. The mark "H" on the accompanying diagram shows its probable location. A possible explanation of the symptoms is: a very small embolus high up in one of the small terminals of the right middle cerebral artery where it affected only the association cells and



A lesion at —A—would cause a brachial monoplegia ; at — B — complete hemiplegia on side opposite the lesion; at — C — paralysis of the third nerve on the same side and of the face, arm and leg on the opposite side ; at — D — would cause hemiplegia on the opposite side ; at — E — would cause paralysis of the face on the same side and of the arm and leg of the opposite side ; at — F — paralysis of the arm and leg of the opposite side (and perhaps of XII N. on same side); at — G —would cause paralysis of arm and leg on the same side.

Diagram taken from Herter's Diagnosis of Organic Nervous Diseases.

consequently disturbed thought. Then after some recovery from this shock the formation of a thrombus below the embolic plug, shutting off the blood supply and causing necrosis in the area through which pass the fibers controlling the extensors of the left arm and leg. That this softening also involves slightly the area of general sensation in the right parietal lobe is shown by the fact that the patient cannot name objects placed in her left hand from the feel (astereognostic sense) and that she cannot tell when her left big toe is moved, or locate movements of the left ankle and knee. There remains a placid paralysis of left ankle with toe-drop, the toes no longer responding to the plantar reflex. The left leg extensors show to galvanism reaction of degeneration. There is contraction of the flexors, especially of the upper arm, where there is still some response to strong faradic current. There has evidently been a rapid phagocytosis at the site of the lesion, with the carrying off of debris. Could we look into the brain now we would doubtless find a small glia-lined cyst filled with yellowish fluid.

Case 3.-C—For Diagnosis:

The patient is a woman aged fifty-two years. Her mother died of cancer and her father of pneumonia. She was an only child and had a healthy childhood and adolescence. Married at eighteen, she had two healthy children and one miscarriage. The husband was an alcoholic, gave her syphilis, and she left him after much abuse. The infection was treated for only one month. She was well up to four years ago, when her menstrual periods stopped. A few months later she began to have dizzy spells, could not move her head without vertigo and sometimes became momentarily unconscious. She has fallen three times in these attacks. There was no mental change until last summer, when she had an apopletic attack which almost paralyzed her right side; this had barely cleared up before she had another. This, too, cleared up, but left the right side weak. At this time the left side was also weakened but to a lesser extent. At times speech was thick but not aphasic. No word blindness, no difficulty in swallowing, no retention of urine.

Examination: a well developed woman whose hair is gray and complexion pink and white. She walks slowly and slightly drags her right foot; with feet together and eyes closed, she cannot stand without assistance. The knee jerks and the wrist jerks are both spastic and there is a double ankle clonus (all more marked on right). Through the fall the pupils were almost rigid; now, however, the right pupil is larger than the left, both react to light but not to accommodation; eye movements are normal but attention soon flags in trying to follow the moving finger; muscles of right side are noticeably weaker than those of left; speech is clear, but slow and drawling. Mentally she is depressed, restless and lachrymose. She is incapable of visualizing, unable to recall the size, color or shape of objects, can read but cannot recall letters unless she sees them. She cannot repeat correctly test sentences such as "Around the rugged rock the ragged rascal ran," and "The fifth riding regiment of light artillery," but recalls familiar rhymes. She cannot converse except about herself and then with tears and lamentations. Complains that her head "feels hollow in back; it throbs on top and feels tight about the ears." "I cannot think of myself as myself but as if I was of the side of the house; if I should die it would be in that wall." "Everything seems so much lower than it really is; I cannot think of the hall as level, it seems as if it ran up hill." "I can't remember names of persons or things and if I close my eyes everything is a blank. I cannot recall the look of anything." (Cannot imagine.)

The urine for twenty-four hours amounted to 20 ounces, was acid, with a specific gravity of 1026,—no albumin or sugar but a

heavy deposit of urates, blood shows positive Wasserman. She can eat anything, but has no appetite; sleeps well the first of night and the latter part lies quietly. Bowels require enemas.

From what is this woman suffering and from what must it be differentiated?

In Tabes Doralis remember Chromium sulphate. We have lately observed much improvement in a patient who has taken it quite constantly for three years.

An effective remedy in many cases of Asthma, especially Cardiac Asthma, is Aspidosperma (Quebracho). Its guiding symptom is "want of breath on exertion," and the tincture in drop doses gives excellent palliative results.

At the February meeting of the Boston District of the Massachusetts Homœopathic Medical Society, which was wholly clinical, there were presented three unusually interesting cases. One of these, which we give below, was entitled :—

A CASE OF POLYCYTHEMIA WITH SPLENIC ENLARGEMENT.

By Dr. Mary A. Leavitt, Boston, Mass.

Mr. M——, aged 60 years, came to me June 23, 1906, complaining of dizziness, burning and pain in bowels and attacks of itching. He had had good health for years, an attack of typhoid thirty years ago being his only serious illness. Family history negative except that his mother probably died of cancer. By occupation he was a shipping clerk.

He was a small, thin man, the lips, ears and backs of hands distinctly cyanotic. The tongue also was deep purple and the general surface of the skin looked suffused and the anemia left after pressure of the hand on the skin was very marked and very slowly obliterated. The feet as well were cyanotic, the general cyanosis being worse in cold weather.

The radials and temporals were moderately sclerotic. Pulse 80, regular. Apex beat in fifth intercostal space in nipple line. Sounds clear. Aortic second a little accented. No enlargement of thyriod, slight enlargement of liver; spleen enlarged, extending to one inch above umbilicus, enlargement uniform, not nodular, not tender to touch. The chest was well formed, not barrel-shaped, the cervical muscles not prominent. Expansion of chest good. No sign of emphysema. Expiration not prolonged.

Had had several dizzy spells on the street when he had all but fallen. These lasted but a moment. Began to have "indigestion" five years ago. Only certain things disagree, acids especially. Much troubled with acid eructation. The mucous membrane of the mouth was very red. Appetite so good that he had constantly to restrain his inclination at the table. Bowels were regular, always distended with gas, and he had so much aching and discomfort from this that he was obliged often to give up his work about 3 to 4 P. M. for the rest of the day.

Very frequently immediately after bathing, he would have very severe itching spells start in toes of one foot or other, sometimes both, and in order to prevent their spreading up to the knee and thighs, he would have to hold the flesh tightly with both hands. This sometimes proved effective.

Analysis. Twenty-four hours 1000 c. c. acid, specific gravity 1020, urea percentage 1.2, T. S. 46.60, alb. trace, sugar none, few hyaline. *Blood Exam.* Haem. 100 per cent., red cells 8,928,000, leucocytes 16,600, small lymph, 11 per cent., large lymph, 4 per cent., neutrophyles 83 per cent., eosin ophyles 1.5 per cent., mast 5 per cent.

I was unable to find any disease in my books on diagnosis corresponding to this symptom complex, and for several months labored in the dark, prescribing only on the most troublesome symptoms. Finally Dr. Richard Cabot was seen and he called my attention to his reports of two similar cases which had recently been published. At that time, he told me, there were but nineteen such cases on record. His advice was to bleed the patient as the only measure that offered any relief. This, however, was not tried.

Mr. M—— shortly, within six months, began to complain of muscular weakness in his legs, making it almost impossible for him to walk except upon level ground, and gradually even this got very difficult.

The dizziness improved, the itching spells became far more infrequent, but the distention and discomfort from gas was better, then worse. A year after I saw him he had an attack of acute congestion of the liver and was under Dr. Batchelder's care in the hospital for two weeks. During that time his red cell count became nearly normal, and there was a leukocytoses of 21,800. Shortly after this attack the patient was obliged to give up work entirely because of the increased muscular weakness and discomfort from gas, and at this time was referred to one of my colleagues who lived near the patient. He used the X-Ray for eight treatments, and the distention and aching were relieved entirely for over three months and have never been as troublesome since. There have been many acute attacks and many remissions since

I first saw Mr. M—— but on the whole, he seems to me as well to-day as when I first saw him. He has been back at full work for two years now, after an interval of three years of disability. He is just over an exacerbation which was severe, lasting two weeks. The cyanosis is practically gone.

The spleen has increased in size. It is now two inches below the umbilicus. The liver is not enlarged. The condition of the heart and kidneys is about the same, blood pressure 190. His blood count taken this afternoon by Dr. Watters is as follows: Haemoglobin 80 per cent., erethrocytes 4,500,000, leucocytes 19,000, large lymphocytes 10, polymorpho-nuclears 88, eosinophiles 1, mast cells 1.

As far as the literature of this disease is concerned, the first case reported was in 1892 by Rendu and Widal, characterized by them as a "rare combination of chronic cyanosis, enlarged spleen and increased number of erythrocytes occurring with primary tuberculosis of the spleen." In 1899 they reported two similar cases. In 1904 Turck reported seven cases and reviewed exhaustively thirteen cases reported in the literature up to that time.

(Vaquez, M. Martin, Lefus, Cominotti, Cabot 2, McKeen, Saundby and Russel 2, Rosengart, Osler 4.)

There are no constant predisposing causes in the cases so far reported. Heredity and previous diseases bear no relation to this condition. The age at which it appears seems to be between 35 and 60. More frequent in males, but about equally divided.

The common symptoms are cyanosis, enlargement of spleen, headache (not present in my case), vertigo, blood findings of polycythemia without a positive mechanical or accepted anatomic cause. In the majority of cases the splenic enlargement was moderate, in two the liver enlargement was excessive. There was localized pain and tenderness in the region of the spleen and pressure symptoms from that organ in all cases. Headache of a chronic and constant type in the majority of cases.

General weakness, disability and greater or less sensory disturbances were marked complaints.

Arterio-sclerosis in four. Blood pressure, 190, increased. Albumen present in over one half.

General course of the disease is progressively worse, with remissions of short duration. Average length six to eight years.

Prognosis: — Absolutely bad as to cure. Nearly all cases have slowly progressed to a fatal termination.

Treatment:—Unsatisfactory. X-Ray gave improvement of general symptoms. Blood findings still the same. Fowler's solution, 30 gtts. daily for a long time has been thought to have aided sometimes.

Dr. Batchelder—Discussing Dr. Leavitt's Paper.

"This is a subject that gives us plenty of food for thought. This particular condition leads my thoughts back to two things,—first, the normal blood production, and of the red disks in particular. We recall that this occurs chiefly in the red bone marrow. The other is the destruction of the red disks, and there are still plenty of arguments as to where that occurs. We do know, however, that the destination of the blood pigment is chiefly to form bile pigment. In this particular case it would seem that the production of red disks was greatly exaggerated, or for a considerable period of time more than 50 per cent. increased, and that the destruction of the same was somewhere nearly normal. We may well wonder whether the disturbing influence which produced this greatly increased proliferation was mechanical or toxic in character. The digestive disturbance, of course, suggests something along the latter line.

One or two rather interesting things might be mentioned at this time. Some have guessed, others have questioned, others have sought to estimate, even roughly, the life history and rate of destruction of the red disks. Today it is stated in physiological circles that there is no single location where the red disks are destroyed, as they are on duty in the circulatory system. Again, taking the elimination of the bile pigment as a basis,—this of course is an exceedingly rough estimate, somewhat conjectural—it has been estimated that about 10 per cent. of the total red disks would be required to produce a normal amount of bile pigment as eliminated from the bile duct fistula. That would mean that the life history of the red disk is something not over ten days.

I well remember some years ago in our medical school, Professor Colby said to us once, and I think that point will apply here: "Wherever you find a cell containing a nucleus, there is the possibility of proliferation; if that cell has parted from its nucleus there is a probability of early dissolution." As you know, red disks form in the so-called red bone marrow, and the nucleus is left behind there to do more work.

One thought regarding the spleen. This is one of the great vascular organs of the body. It normally has a definite rhythm, and upon some of the lower animals it has been demonstrated to have a rhythm of very short periodicity, changing its volume a good many times in an hour, but its larger rhythm—the so-called digestive rhythm, comes on some hours after food has been digested.

In this particular instance it is of interest to note that while the number of red disks has come down to normal, the leucocytes are still far above it. So until we know more about the true functions of the spleen, and still more about the origin and destruction of the red disks, I think we shall have to defer definite conclusions as to this particular case. I do feel that whether the X-Ray has had much or little to do with the patient's improvement, some such therapeutic measure as that certainly offers more hope than almost anything else."

DRAINAGE OF EMPYEMA IN CHILDREN.

Kelley of Cleveland, Ohio, has contributed an interesting article to the American Journal of Surgery on the above topic. Among other things he says: "Washing out the cavity should not be done at the time the opening is made, and only in selected cases and with due care at any time. Washing is only necessary when gangrene is present, or if fetor persists *after the most thorough drainage.* Pumps, siphons, valves and suction apparatus are more bother than they are worth in children. They are quite uncalled for where an adequate opening properly located is maintained. Occasionally a counter-opening or a second section at the lowest point of the abscess cavity is an advantage. The movements of breathing and the changes of position of the child, with its mobile chest walls, will be found to accomplish all the pumping necessary. Expansion of the lungs is secured by the same means, the dressing over the mouth of the drain doubtless exerting somewhat of a valvelike action. Expansion is also aided by laughing, crying, gymnastics, blowing upon wind instruments or toys."

METROPOLITAN, CUMBERLAND STREET AND FLOWER HOSPITALS, JOINT EXAMINATIONS.

An examination for the appointment of internes to the above hospitals will be held on April 10, 1912. Thirty-four positions will be awarded according to standing in the examination, each candidate securing his preference while vacancies remain, then his second or third choice. Identical examinations will be held in Ann Arbor, Boston, Chicago, Philadelphia, Cleveland, St. Louis and San Francisco.

Application blanks may be secured from the Deans of the colleges or from the Secretary of the Examining Board. The nature and terms of the services are as follows:

Cumberland St. Hospital, Brooklyn.

Six Internes appointed annually, service for one year; two entering in June, two in August and two in October. All branches of Medicine and Surgery exclusive of acute contagious and specific diseases. Large emergency Ambulance and Dispensary service. Maternity cases number about 225 annually.

Metropolitan Hospital.

Largest general hospital in the United States. Nineteen annual appointments; twelve entering on June 15th and seven on December 15th. Eighteen months service. Seven divisions: Male Surgical, Female Surgical, Medical, Genito-urinary and Nervous, Eye and Ear, Nose and Throat, and Obstetrical. Two tubercular services salaried. New perfectly equipped Pathological Building with abundance of material. New detached Staff House. Emergency Ambulance Service.

Flower Hospital.

Nine Internes appointed annually, two of whom must have had one year's hospital experience. Service begins July 1st for one year. Six ambulances; twenty to sixty calls daily. Internal Medicine, Obstetrics, Gynecology, Pediatrics, Surgery, and the various specialties. Clinical instruction by the College Faculty.

J. PERRY SEWARD, M. D.,
Sec'y Joint Examination Committee,
200 West 70th St., New York City.

HOMŒOPATHY AND GENERAL MEDICINE.

The February number of the "Homœopathic World," London, speaks editorially as follows concerning this topic:—

"The last ten years have seen a notable change in the general attitude of the profession towards Homœopathy. Although many of the older of the orthodox maintain their exclusiveness, and although the leading journals refuse even the advertisements of those whom they still class as heretics, yet the bitterness and rancour of speech have largely departed, and there is greater willingness to co-operate in practice and less deliberate ostracism both in societies and in private relationships. All this is to the good, and it has come about in two ways. The orthodox have approached us by their vaccine treatment and by admitting the obviously opposite effects of large and small doses of agents like X-rays (observations which only confirmed multitudes of separate records regarding the effect of drugs scattered through orthodox books and journals), and modern physics and chemistry have lessened the marvels of the infinitesimal. So has the path of the majority leant a little towards homœopathy. Meantime, we by our readiness to profit by the work of our brethren in surgery, pathology and bacteriology have emphasized our many points of agreement rather than our one point of difference, the application of drugs to diseases. So have we drawn nearer to the majority."

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only, and preferably to be typewritten —personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business, should be sent to the Business Manager, 22 Columbia Road, Dorchester, Boston, Mass.

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Reports of Societies and Personal Items should be sent in by the 15th of the month previous to the one in which they are to appear. Reprints will be furnished at cost and should be ordered of the Business Manager before the article is published.

THINGS WORTH WHILE.

"He does well who in the forest wild,
Slays the monster and saves the child;
But he does better and merits more
Who drives the wolf from the poor man's door."

He does well who alleviates suffering and restores to health and strength the helpless invalid, but he does better and merits more who prevents such suffering and by the dissemination of knowledge establishes and maintains the standard of health so that there shall be no helpless invalids.

The "World's Work" for February, in speaking of endowments, says there is an increasing tendency amongst the rich and philanthropic to make large endowments to institutions of scientific research, especially for medical research, that the large percentage of charitable gifts are today directed toward the alleviation and prevention of human suffering. This surely is good news and the better, too, because 'tis true. Never before has the public at large been more keenly alive to what prevention means than at present. But the campaign of preventive education has only just begun, and nothing can aid more materially in its propaganda than institutions of medical research.

The Robert Dawson Evans Memorial Building for Clinical Research and Preventive Medicine, the opening of which occurred on Wednesday, March 6, is a magnificent concrete example of what money directed by a broad-minded philanthropy can accomplish for the uplift of humanity.

Mrs. Evans is not a physician, but had she spent her whole life in the study of the cure and prevention of sickness and had she risen to the highest eminence of medical learning, with a cor-

responding practical efficiency, she could not have done for the sick world what she has made and will make her money do. By this splendid gift of a research hospital she has made it possible, not for one, but for hundreds of physicians to use to the best advantage their powers of research and learning for the purpose of bringing to light those secrets, the understanding of which will go far toward lifting the burden of the world's sorrow and suffering.

Students of sociology are discovering that sickness is the tap root of the greater part of all real suffering, and hence the causative factor of most of the misery and poverty of the world. Once eliminate sickness, if only from the productive period of life, and the greater problems of sociology vanish.

The world has also learned that things don't "just happen." They result. Sickness never happens; it is a direct result of something. The burden of determining what that something is rests upon the analytical minds in the medical profession. But to do that requires facilities and equipment far beyond the reach of the individual scientist.

For years certain rich men of this country put up their money for the purpose of backing expeditions to reach the North Pole. They were actuated by a feeling of national pride, scientific interest, and the general sporting instinct for discovery and conquest. Granting that the good which has come or may come in the final conquest of the North is commensurable with the enormous sums of money expended and the loss of life entailed, how much more practical would have been the general end results had the same persistency and the same sacrifice of money and life been made in an attempt to discover the cause, cure and prevention of certain obscure diseases which today are causing untold misery and suffering, to say nothing of industrial loss.

But the cause, cure, and prevention of disease is no longer a question *merely* of sentiment, sympathy and science. It is fast becoming an acute economic one. The world is demanding physical efficiency as never before, and the call to "deliver the goods" is upon the shoulders of our profession. Can we and will we do it? Mrs. Evans has answered this in part by saying to the Faculty and co-workers of Boston University School of Medicine, "Here is your workshop ready equipped. Now show results."

Mrs. Evans has not only given us a great opportunity but she has imposed upon us an enormous responsibility. The homœopathic school at large has long coveted just such an opportunity for research work. Our excuse for not taking more active part in such work has been the reasonable one of having no facilities. Now we have the opportunity and the facilities. "What will the harvest be?"

It must be an immense satisfaction to know that one has provided a lever sufficiently long for a multitude of able bodied men and women to bear down upon in the earnest attempt to lift the burden of the world from the backs of the weak.

A LITTLE MISSIONARY WORK.

As an instance of what a little missionary work will do for the "heathen" here is an example:

Resolved, That we, the teachers and officers of the Brookline Baptist Bible School in session assembled, do protest against any of our Baptist publications carrying patent medicine advertisements in the columns of any of their religious publications. We especially protest against the appearance of these medical advertisements against whose proprietors there has been issued a fraud order by the United States Government.

As a result of sending out a copy of this resolution, three religious publications immediately discontinued the advertisement of "Cancerole," one of the insufferable cancer humbugs. One of the three publications carried no other patent medicine "ad." Another one dropped all advertisements of that character, and the third pleaded for more time in which to get rid of theirs and substitute advertising of an unquestionable character.

When the plea is made that a publisher has such a pachydermis that the protests of his readers never penetrate his "innards" just try him with a real, live, hot protest and see him squirm.

At a meeting of the Boston Section of the Massachusetts Homœopathic Medical Society held January 4, 1912, the following resolution was unanimously adopted:

Resolved, That we, the Boston Section of the Massachusetts Homeopathic Medical Society, in session assembled declare ourselves as having no allegiance nor sympathy with the League for Medical Freedom. That we are opposed to its methods and aims, and we further protest against the use of our name as a School by said League in its propagandistic work.

(Signed), William A. Ham, Secretary.

COMPARISONS ARE ODIOUS.

The State of New York may well be proud of its Commissioner of Health, as is the school of medicine which he so ably represents. Time and again we have heard from many sources the words, "Dr. Porter is the best Health Commissioner New York ever had." It becomes somewhat interesting to compare the figures in his report of 1911 with those just rendered by the Boston Board of Health for the same year.

Dr. Porter's report shows the lowest death rate yet recorded in New York State. There were 2092 fewer deaths in 1911 than in 1910, and what is of striking interest is that fact that the urban

death rate was but little higher than the rural. Has New York really reached the point where city life is as healthful as country life? The death rate was but 15.5 per 1000 for 1911 as compared to 16.1 for 1910.

The births exceeded the deaths by 75,288. The fact that there were about 42 less suicides in 1911 than in 1910 is another evidence of the genial "sunshiny" influence of "Eugene."

Boston surely makes a poor showing in comparison with this report, with her mortality of 18.5 for 1911. Comparing her report with that of other cities we find these figures:

	1911	1910
Cleveland	13.5	14.3
Chicago	14.3	15.1
Pittsburgh	14 7	17.9
St. Louis	15 5	15.8
New York	15.5	16 1
Philadelphia	16.3	17.4
Baltimore	18.4	19 2
Boston	18.5	17 2

Everyone of these cities except Boston shows a decrease in mortality for 1911 as compared with 1910, while Boston shows an increase of 1.3 to the 1000. Is Boston so extremely unhealthful or is the Board of Health so extremely Fitzgeraldized?

A CLOSE SECOND.

The real credit in being second in a race depends somewhat upon who is first. If the first is the best there is, then the second becomes the second best there is. Upon that hypothesis, Boston University School of Medicine sends out the second best students in New England, if the figures of the State Board of Registration in medicine are to be taken as a criterion.

Each year this school has kept neck and neck with Harvard in the high standing of her pupils at the State examinations. This year Boston University is second, but a very close second, to Harvard, not alone in the high marks attained but in the low percentage of failures. While examination marks alone do not prove practical efficiency, yet they are pretty valuable signs and show that these graduates have been carefully instructed, else they could not uniformly attain such high marks.

The Massachusetts State Board of Registration in Medicine has recently published its general report for 1911. In this is given the comparative standing of the leading medical schools from which ten or more candidates appear for registration. The percentages are as follows:

	Percentage of failures	Percentage attained
Harvard	5.	78.1
Boston University	7.6	76.6
Tufts	18.9	76.
College of Physicians and Surgeons	33.	70.2
Massachusetts College of Osteopathy	54 5	70.8

SOCIETIES.

Boston Homœopathic Medical Society.

The February meeting of this Society was held in the Natural History Rooms, Thursday, February 1st. The evening was devoted to the presentation of clinical cases. The first case was that of Polycythæmia with Splenic Enlargement, by Dr. Mary A. Leavitt; discussion opened by Dr. F. P. Batchelder. Dr. Edward P. Colby presented the second case, one of Astasia Abasia. Dr. Nelson M. Wood described in detail a case of Suppurative Pericarditis that had occurred in his service at the Massachusetts Homœopathic Hospital. The attendance was larger than at any other meeting during the past year.

PITTSBURG MEETING OF THE INSTITUTE.

Further news has been received concerning the promising program that will be presented to the Institute at the Pittsburg meeting in June next. We learn from Dr. Sarah M. Hobson of Chicago, Chairman of the Bureau of Sanitary Science and Public Health, that the following topics will be discussed: Under the heading of "Prevention of Occupational Disease" will be several papers such as "Occupation Neuroses," "The Peril of Dust in Cotton Mills," "Oiled Roads; Prevention in Air-borne Diseases," "Cases from a General Practice." Under the topic of "Race Culture" will be discussed Mendel's Law, reports of State Legislation on Sterilization of the Unfit, and "Publicity in the Prevention of Venereal Disease." Among those taking part we note the names of Dr. George H. Martin, San Francisco; Dr. John H. Bennett, Pawtucket, R. I.; Dr. Frank K. Hill, Rockford, Ill.; and Dr. Rebecca George, Indiana.

Just as we go to press information comes from Dr. Ogden of St. Paul Chairman of the Bureau of Clinical Medicine, in which he gives his program as planned for the coming meeting of the Institute. This program will be as attractive and desirable as those already reported. It will consist of two sessions, the first upon Diagnosis, the second upon the Treatment of Infectious Diseases. In the first section will be papers by Drs. Hinsdale of Ann Arbor, Mitchell and Wilson of Chicago, Reily of Missouri, Royal of Iowa, and Watters of Boston. The second section, devoted to the treatment of infectious diseases, will consider Typhoid Fever, Acute Septic Infections, Acute Polio-Myelitis, Acute Rheumatic Fever, and Acute Pneumonic Fever, by Butler of Cleveland, Ward of San Francisco, Shantz of Reading, Penn., Wells of Philadelphia and Van Den Berg of New York.

The Missouri Institute of Homœopathy will hold its next meeting in Kansas City, Missouri, on the 24th and 25th of April, Scott Parsons, M. D., General Secretary, 4052 Washington Boulevard, St. Louis, Mo.

BOOK REVIEWS.

Medical Europe. By James Henry Honan, M. D. P. Blakiston's Son & Co. Publishers. Philadelphia. 1912.

The contents of this little book will be of great value to those younger members of the medical profession who at this time of the year are considering completing their education of medicine in some part of Europe. It will also be of value to those longer in the profession who have a definite idea of their desires in studying abroad. The book answers as none other to our knowledge does the various questions that come to all such prospective post-graduate students. It consists of a detailed description of the courses available for medical study in Germany, Austria, Great Britain, France, Switzerland. Not only does it give the courses by name, but also quite a detailed description of what these various courses cover. For illustration, in Glasgow, detailed description of post-graduate work in Clinical Medicine, Clinical Surgery, Hematology, Electro-therapeutics, Vaccine Therapy, etc., is given, including the men having the courses in charge, the days of the week, the hours of the day, and the wards in which they will be held. Maps of the principal cities are also included in which the various hospitals and medical institutions are clearly marked out, thus facilitating access to the various locations. We strongy recommend this for the perusal and study of all who are contemplating studying abroad.

Progressive Medicine. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences, edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia; physician to the Jefferson Medical College Hospital; assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia; Instructor in Ophthalmology, Philadelphia Polyclinic Hospital. Volume IV. December, 1911. Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas and Peritoneum—Diseases of the Kidneys—Surgery of the Extremities, Shock, Anesthesia, Infections, Fractures and Dislocations, and Tumors—Genito-Urinary Diseases—Practical Therapeutic Referendum. Lea & Febiger. Philadelphia and New York. 1911.

As usual with every number of this periodical, the present one brings a vast amount of information arranged in a most accessible manner. It deals with diseases of the Digestive Tract, of the Genito-Urinary Tract, Surgery of the Extremities, and a practical Therapeutic Referendum. Probably from the standpoint of the practitioner the chapter upon Gastro-intestinal diseases will be of most value, although the review of the present status of Urinary antiseptics is excellent. In the therapeutic department serum therapy and vaccines receive an increased degree of attention.

Electro Therapeutics and X-Ray Therapy. With chapters on Phototherapy, X-Ray in Eye Surgery, X-Ray in Dentistry, and Medico-Legal Aspect of the X-Ray by J. M. Martin, M.D.; professor of Electro-Therapeutics and X-Ray methods in the Medical Department of Baylor University, in the Medical Department of Southwestern University, and in the State Dental College, Dallas, Tex.; member of the Texas State Medical Association, American Medical Association, American Rontgen X-Ray Society, etc. Containing 219 illustrations. St. Louis. C. V. Mosby Company. 1912.

As the author in his preface stated that the book has been written for the general practitioner and student, it seemed wise that one of such class should make the review rather than a specialist. Opinions thus derived are accordingly open to criticism from the advanced specialist's standpoint, but are intended to express the impressions of one who is not already expert upon the subject. The first part of the book deals with the various forms of electricity and modes of applying it to the human being as a therapeutic agent. The descriptions of these various methods while doubtless most correct and accurate seem to pre-suppose earlier knowledge of the subject to a consider-

able extent, and therefore it would seem to be difficult for the student to obtain all his information from this work. There is a very good chapter upon Phototherapy, also one upon High-Frequency Currents. The section devoted to the treatment by the X-ray and to diagnosis by the same means is very full. The methods of diagnosis seemed to be excellently portrayed. Some of the impressions received in certain parts are a trifle unfortunate. Thus in connection with the treatment of Leukemia, while it is stated that a case has never been permanently cured by the X-ray yet the general impression gained from the paragraph is that the X-ray is of wonderful value in this disease and that probably most of the cases that have not been cured have been improperly treated, or treated for an insufficient length of time. The most valuable part of the book undoubtedly will be found in the last 100 pages, which deal with fractures, dislocations, diseases of bones and X-ray diagnosis.

Practical Gynecology. A comprehensive text-book for students and physicians by E. E. Montgomery, M.D., LL.D., Professor of Gynecology, Jefferson Medical College; Gynecologist to the Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynecologist to the Philadelphia Lying-In Charity, the Kensington Hospital for Women, and Consulting Surgeon to the Jewish Hospital. Fourth edition. Revised and Rearranged. With 589 illustrations, the greater number of which have been drawn and engraved specially for this work, for the most part from original sources. Philadelphia. P. Blakiston's Son & Co. 1912.

Earlier editions of this work have been received with avidity by the medical profession. The scope covered in the present volume is essentially the same as that in the earlier editions, the principal difference being one of rearrangement. The question of Serum Therapy and of Vaccine Therapy is considered in a fair and quite full manner, the author stating his belief in such agencies when properly indicated. Numerous illustrations throughout increase to a great extent the general attractiveness of the book from the standpoint of the student. The majority of these illustrations are excellent. Surgical methods of procedure are carefully described. It would seem from our examination that the section classed as Puerperal Tumors may be one to deserve most particular approbation. Other parts might be selected, however, equally desirable. The author manifests his opinion concerning ectopic gestation by devoting more than thirty-five pages to that subject alone. With this opinion we are sure that all who have had cases of such will fully agree. More than a hundred pages are devoted to that bane of womankind, displacements of the pelvic organs. Detailed consideration of various phases cannot here be taken up. We may summarize by saying that this new edition should do two things, secure the allegiance of old friends and bring to it the good feelings of new ones.

Case Histories in Medicine. Illustrating the Diagnosis, Prognosis and Treatment of Disease, by Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second Edition, Revised and Enlarged. W. M. Leonard, Publisher, Boston, 1911.

The first edition of this book made for itself an enviable reputation. It was printed without answers to the questions and was mostly for undergraduate use. The present volume is more adapted for general use, as the questions propounded are answered and diagnosed. The reviewer has with much interest made of this book a form of self quiz, and he believes that it would be very advantageously used in this manner by any general practitioner. The method of treating the subject of clinical medicine is so at variance to the usual one that from the very novelty it is as pleasing to read as it is instructive to study. It is very cordially recommended.

THE MONTH'S BEST BOOKS.

Medical Service in Campaign. Straub. $1.50. P. Blakiston's Son & Co.
Infection of the Lung. Kanaval. $3.75. Lea & Febiger.
Electricity in Medicine and Surgery. Potts. $4.75. Lea & Febiger.
Practical Physiology. Hemmeter. $2.50. P. Blakiston's Son & Co.
Pharmaceutical Bacteriology. Schneider. $2.00. P. Blakiston's Son & Co.

The Medical Counsellor, of which Dr. Dale M. King has for a number of years been editor, has with the beginning of the new year suspended publication and its subscribers have been transferred to the Cleveland Medical and Surgical Reporter.

The first number of the Medical Times which has appeared under its new management recently reached the office. It comes in a new type and in many ways with new arrangement. The editor, Dr. H. S. Baketel, announces that there will shortly be established several new departments that promise much to increase the value of the journal. We wish for it much success.

PERSONAL AND GENERAL ITEMS.

WANTED—AN HOMŒOPATHIC PHYSICIAN FOR SEARSPORT, MAINE. Dr. Hines reports that there is an excellent opening for an homœopathic physician in Searsport, Maine, from which place he has recently moved to Amesbury, Mass. In his last year there Dr. Hines had a $3000 cash practice, and he will be glad to introduce a good physician to his former patients, free of charge.

WANTED, to complete a physician's file of the *New England Medical Gazette*, the following numbers:—February and November, 1894; September and October, 1901; October, 1904. Anyone having these numbers and willing to dispose of them will please communicate with the *Gazette*, care of Business Manager, 422 Columbia Road, Boston, Mass.

Dr. Thomas E. Chandler has removed his office from 259 Beacon Street to 374 Marlborough Street, Boston, and his residence to 51 Verndale Street, Brookline.

Dr. Sarah Sweet Windsor has removed from 10 Exeter Street to 391 Beacon Street, Boston.

Dr. F. S. Eveleth, who has recently moved from Massachusetts to Concord, New Hampshire, has passed the New Hampshire State Board examinations so successfully that his average percentage was only a fraction short of 89 per cent., Dr. Eveleth graduated from B. U. School of Medicine in 1899.

Dr. Clarence R. Hines, B. U. S. M., 1907, has removed from Searsport, Maine, to Amesbury, Massachusetts, where he succeeds Dr. F. S. Eveleth in practice.

Dr. William A. Siebert, of Easton, Pa., a graduate of the class of 1885, B. U. S. M., is spending a few weeks in the Canal Zone, to return about March 25.

Dr. Lydia Baker-Pierce, class of 1906, B. U. S. M., has recently been elected to the staff of the Pittsburgh Homœopathic Hospital. Here she has a daily clinic in her specialty of diseases of the ear, nose and throat.

Dr. C. A. Eaton, B. U. S. M., 1908, presented a paper upon "The Blood and its Interpretations" at the December meeting of the Cumberland Homœopathic Medical Society held in Portland, Maine.

Dr. J. E. Belville has resigned from his office as Registrar of Hahnemann Medical College of Philadelphia. His successor is Dr. Samuel W. Sappington.

The December report of the Delaware State Board of Medical Examiners should be of more than passing interest to homœopaths. At this examination the highest mark, 89.7 per cent, was received by a graduate of the New York Homœopathic College, the next highest mark, 87.2 per cent, by a graduate of the Hahnemann Medical College of Philadelphia.

We extend our congratulations.

Dr. Frederick C. Shattuck, the well-known Boston physician, has resigned from the chair of Clinical Medicine in Harvard Medical School. In recognition of the notable service which he has rendered he was appointed Professor Emeritus at a meeting of the President and Fellows of Harvard College. At the same meeting Dr. John T. Bowen, Professor of Dermatology, resigned from his department and was also made Professor Emeritus.

An outbreak of typhoid fever in London has apparently been traced to a consignment of infected fish.

Dr. Edward H. Bradford, the well-known orthopedist, has announced that he will resign from his position as surgeon in the Children's Hospital, Boston, said resignation to take effect June first.

Dr. Alvah H. Doty has been awarded the medal offered by Dr. Louis L. Seman for progress and achievement in the promotion of hygiene and sanitation and the litigation of occupational diseases. This award is particularly notable because of the political "wire pulling" going on in New York concerning Dr. Doty's appointment.

The new Mt. Sinai Hospital of Boston is now apparently well under way, under the presidency of Dr. Richard Cabot.

It is announced that the effort of the Medical School of Western Reserve University to raise a fund of $1,000,000 for the endowment has finally been successful.

By the will of the late Mrs. Clara E. Wellman, the Massachusetts Homœopathic Hospital receives a bequest of $1,000. A similar bequest is also given to the Boston Nursery for Blind Babies, the Home for Crippled Children, the Vincent Memorial Hospital, and the Children's Hospital.

The Melrose Hospital Association receives by the will of Thomas W. Ripley of Melrose the sum of $5,000.

The Boston Herald states that the sum of $50,000 has been left to the House of Mercy Hospital, Pittsfield, Mass., by the late Mrs. Florence Sampson. The bequest is in memory of her three sons.

We judge that a young woman of Philadelphia, twenty years of age, holds the record for multiplicity of surgical operations. During the past seven years she has been operated upon thirty-two times at the Medico-Chirurgical Hospital of Philadelphia. She first went into the hospital for a deformity of the leg. This took six operations. She then had an attack of appendicitis which it is said necessitated twenty-six operations.

We have heard from one of our exchanges that the University of Christiana has for the first time in its history bestowed a gold medal upon a woman. The recipient is Dr. Marie K. Jolseth, the award being given in recognition of her excellent work in pathological anatomy.

At about the same time announcement was made of the appointment by the University of Copenhagen of the first woman member of its faculty. Miss Lis Jacobsen, a well-known expert upon the Danish language, receives this honor.

Dr. Henry A. Christian has resigned from his position as Dean of the Faculty of Medicine at Harvard University. His resignation will take effect September 1st of the present year.

Dr. Henry Jackson, Instructor in Clinical Medicine at Harvard Medical School, has also resigned his position.

The results of the last census show that there are 130,000 physicians in the United States, including psychopaths, etc. This gives an average of one physician to every 650 persons. The average income is said to be about $1,200.

The North American Journal of Homœopathy for March has the following item:

"Charmed by his signed editorials contributed to the North American, the New England Medical Gazette has induced Dr. DeWitt G. Wilcox to join its editorial staff. Dr. Wilcox is as skilful with his pen as he is with the scalpel, and the North American is glad to share his talent as a writer of interesting and forceful editorials with its contemporary."

Dr. Herman Ulrich, class of 1911, B. U. S. M., has terminated his service at the Metropolitan Hospital, New York, and has accepted appointment at the newly opened Evans Memorial for Clinical Research and Preventive Medicine.

Dr. Louis K. Cross, class of 1898 B. U. S. M., of Winchendon, Mass., sailed on March 9, with his family, for a six weeks' vacation in Barbadoes. During Dr. Cross' absence his practice will be cared for by Dr. B. J. Manoogian, class of 1911 B. U. S. M.

Another of the professors of the Massachusetts Institute of Technology has been accorded the honors of editorship of a technical publication, the one being Professor Selskar M. Gunn and the other, the Journal of the American Public Health Association. The Journal has been in existence for several years, becoming a monthly in January, 1911. The first editor of the monthly was Dr. Burt R. Rickards, M. I. T., '99. He was head of the bacteriological laboratory of the Boston Board of Health, which position he resigned to join the State Board of Ohio. A year ago he was called to the University of Illinois at Urbana, and during the year he has been caring for the magazine. Press of other duties forced Dr. Rickards to relinquish the editorial work, and the publishers have selected another Technology man and professor.

Mr. Gunn is a 1905 man, who after completing his course under Professor Sedgwick remained in the city a year with the Boston Biochemical Laboratory, where he had much experience in industrial biology. In 1906 he became first assistant bacteriologist to the State Board of Health of Iowa and lecturer in hygiene and sanitation at the Iowa State University. Early in 1908 he was called to the important place of health officer at Orange, N. J., and under his charge the work for which Orange has been so celebrated, was begun. Last summer Mr. Gunn was commissioned by the mayor of Milwaukee to make an efficiency investigation of various of the city's public departments. Mr. Gunn is assistant professor in the department of biology and public health at the Institute.

Dr. Geo. B. Maxwell has removed from Attleboro, Mass., to Ponters, Montgomery County, Texas. His practice at Attleboro has been purchased by Dr Edward B. Richardson, formerly of Rochester, Vermont.

OBITUARY.

Dr. Perry Hall Dudley, son of the late Dr. Pemberton Dudley, one time dean of Hahnemann Medical College, Philadelphia, died on January 15, after a long illness. Dr. Dudley was graduated from Hahnemann in 1892, and up until four years ago was connected with the Hahnemann College and Hospital, the Children's Homœopathic Hospital and the West Philadelphia Homœopathic Hospital. After the death of his father he severed his connections with these institutions and entered private practice.

Dr. James Samuel Hickey, philanthropist, physician and professor, who had been ill at his home, 1830 N. 11th St., Philadelphia, since October last, died on January 26, from inflammation of the heart. Dr. Hickey, who was fifty-six years old, was professer of anatomy at Hahnemann College, and widely known in his profession. Dr. Hickey was born in Cincinnati, November 7, 1855, and during his school days was a classmate of President Taft.

Dr. Amanda H. Kempton, for many years in practice in Newport, New Hampshire, died on February 13. She was a graduate of Boston University School of Medicine, class of 1882.

Dr. Edward F. Fornias, a widely known homœopathic physician of Philadelphia, died from heart failure at his home, 2435 N. 8th St., on January 22. Dr. Fornias was sixty-nine years old and was a graduate of Hahnemann College of Philadelphia in 1888. He was born in Havana, but came to Philadelphia when a boy. For a time he represented the Government of Uraguay and was acting vice-consul for Spain.

MEDICAL SCHOOL FACULTY DINNER.

The faculty of Boston University School of Medicine held a dinner and informal business meeting at the Hotel Victoria on Thursday evening, February 15. About thirty-five members were in attendance, including the president of the University, Dr. Murlin. The latter gave a short address concerning the work of the entire University and his hopes for benefitting the various departments. This was followed by a general discussion upon the question of post-graduate courses at the Medical School. The discussion was opened by Dr. Wells and was participated in by a number of those present. There was a unanimous opinion in favor of the establishment of such, and a commitee was appointed to make arrangements for it. The chairman of the committee was Dr. Wells.

During the evening Dr. Allen presented resolutions in the form of a short address to Dean Sutherland. These resolutions had earlier been passed by the Executive Committee of the Medical School on Dr. Sutherland's birthday, February 9, and were as follows:

Mr. Dean:

Fifty-eight years ago today you first saw the light of day over in Charlestown, on the battlefield of Bunker Hill and within a short distance of the shaft erected to commemorate that famous battle. It was an ideal birthplace for an American and one which might well be calculated to stimulate qualities of true patriotism.

After passing through childhood and attaining your majority, you entered Boston University School of Medicine as a student, in the class of 1876, and graduated in 1879, one of a small but select number. During the years of 1881 and 1882 you were called upon to serve as assistant in Clinical Medicine, and during 1884 and 1885 as assistant in pathology and therapeutics. In 1887 it would seem that at last the proper place had been found for you as a teacher, for in that year you began your long and successful work in anatomy, serving one year as lecturer and the following twenty as professor of this important chair. During these twenty-one years, anatomy in Boston University School of Medicine became a classic, and the instruction given was second to none in the United States.

In 1908 you accepted the chair in Theory and Practice, and now hold it. You served as Registrar from 1896 to 1899 inclusive, and you have been the honored head of the School since 1900. Twenty-nine years since graduation you have been constantly at work in some position for the welfare of the School, and the actual time which you have devoted to it in one way or another must be enormous.

We are sincerely glad that you have been permitted to do this and that another birthday has come with its opportunity for us to extend to you our hearty and sincere congratulations, and therefore be it

RESOLVED, That the Executive Committee, representing the Faculty of Boston University School of Medicine, extend to our honored Dean our most sincere and hearty felicitations upon this, his fifty-eighth natal day. We rejoice that he is hale and strong, that his physical and mental vigor are unimpaired, and that he is still our honored leader and counsellor. We hope and pray that many more happy birthdays are in store for him and that he may long be spared to continue work which needs him so much. Be it further

RESOLVED, That these resolutions be spread upon the minutes of the Executive Committee.

FOUNDERS' DAY BANQUET, ALPHA SIGMA.

The fifteenth annual banquet of Alpha Sigma was held at the United States Hotel on the anniversary of Founders' Day, February 24, 1912. There were present forty-four members, including ten charter members, twenty undergraduates and the Grand President. The Toastmaster was Conrad Wesselhoeft, M. D., who was introduced by the retiring President of the Graduate Chapter, Clarence Crane, M. D. The toasts were: Internal Medicine, Wesley T. Lee, M. D., Somerville; The Medical Student, David L. Belding, '13; The Active Chapter, A. E. Mills, '12; The Interne, R. Jacoby, M.D., '11; The Specialist, L. M. S. Miner, D.M.D., M.D., '07; The Affairs of the Nation, Charles R. Bell, M. D., Waltham, '06; The Grand Council, Dana F. Downing, M. D., '04. The officers of the Graduate Chapter were elected as follows: President, E. Ray Lewis, M. D., '01; First Vice-President, Frederick W. Colburn, M. D., '97; Second Vice-President, H. E. Diehl, M. D., '11; Secretary, F. R. Sedgley, M. D., West Roxbury, '02; Treasurer, E. S. Calderwood, M. D., '04. In addition to those already mentioned there were present Drs. W. H. Watters, '00; W. J. Graves, '99; O. L. Spencer, '11; H. W. Nowell, '11; C. T. Howard, '98; Conrad Smith, '99; W. H. Flanders, '99; J. A. Rockwell, Jr., '99; W. K. S. Thomas, '93; A. H. Ring, '97; H. M. Emmons, '02; W. A. Ham, '03, and Messrs. Coates, Drury, Hepburn, Howes, Lane, Young, Seniors; Hooker, Moore, Juniors; Alexander, Cottrell, Kinsley, Lee, Rodger, Sewall, Worcester, Sophomores; and Bartlett, Clark, Dauphin, Struthers, Freshmen, B. U. School of Medicine.

OVERCROWDED HOSPITALS IN NEW YORK.

The annual report of the New York State Board of Charities shows that the hospitals of New York are greatly overcrowded. This is particularly true of the Metropolitan, Bellevue, Kings County and City Hospital. It is understood that recently in the Bellevue there were more than 800 beds in excess of the normal capacity, and that at times cots and mattresses were placed on the floor between the beds. During one night 480 mattresses were thus used. Estimates that at least 1,200 beds more should be provided seem to be conservative.

MEDICINE AS A PROFESSION.

The University of Missouri has recently issued a bulletin in which are given some of the advantages and disadvantages of medicine as a profession. These are as follows:

"Some of the more obvious disadvantages of medicine as a profession may first be mentioned. Among these are the irregularity of the work,

the exposure and danger, the severity of physical and mental strain, and the relatively poor remuneration in comparison with the skill and education necessary. It should be clearly understood that competition is severe, for the medical profession (like most others) is overcrowded. There are to-day in the United States more than 125,000 licensed practitioners (not counting irregulars of various kinds), or an average of about one to every seven hundred people. In proportion to the population, this is twice as many as are licensed in Great Britain, and over three times as many as in France and Germany. Moreover, with the increase of popular knowledge regarding hygiene and preventive medicine, the need for medical service is in some respects diminishing.

"As an offset to the foregoing, however, the medical profession has numerous advantages to offer to those properly qualified. In the first place, for those who achieve eminence by reason of unusual ability and thorough training, the financial rewards are great. This is especially true in surgery and certain other special lines. Even aside from these exceptional cases, every really well-qualified practitioner is reasonably sure of a good income.

"Money, however, is by no means the chief attraction which the profession of medicine has to offer. There is a fascination about the work which is difficult to explain, but which is, nevertheless, characteristic. Successful practitioners enjoy their work in spite of hardships and difficulties. Moreover, even in this materialistic age, the philanthropic aspect of the practice of medicine appeals strongly to many. From this point of view, no profession offers greater opportunities for public and private service."

ACETONE IN INOPERABLE CANCER.

The Maryland Medical Journal for December contains an article upon the "Treatment of Inoperable Cancer of the Uterus" by Samuels. After describing the technic of the application he writes as follows concerning the effect:

"The immediate effect from the application of acetone is a slight oozing, which checks itself within a short time. The surface of the crater becomes covered with a thin or whitish film. A slight discoloration may be noted in some parts of the crater; this is due to the action of the acetone upon small bleeding points. The normal vagina is not appreciably irritated. A slight irritation of the skin may take place if the parts have not been previously protected by a thin coating of petrolatum; and outside of the intense burning sensation, which arises from carelessly allowing the acetone to run over the outer skin, there is no pain from the application. The burning sensation, however, soon subsides, and it is rarelv, if ever, necessary to employ morphine.

The remote result from the application of acetone manifests itself in the marked reduction of the intense odor. The discharge, which at first is profuse and watery, gradually disappears; hemorrhages occur with less frequency, and are not nearly so profuse. After three or four weeks of this acetone treatment, a considerable diminution in the extent of the wound cavity is noticeable. The walls become smooth and firm, and in one instance the walls were so firm that the finger could not remove any friable tissue. With the stopping of the weakening hemorrhages and discharges, the general health of the patient for the time being improves visibly, and the pain is somewhat lessened. In two patients in whom cancer had extended to neighboring organs, while the discharge and hemorrhages ceased under its application, the pain was not relieved, and morphine in large doses was necessary."

PERNICIOUS VOMITING.

This subject that is so frequently brought home to every practitioner of medicine is well treated in an article by Ingraham in a recent number of the Journal of the American Medical Association. Among other things

he states that the characteristic vomiting of pregnancy, moderate or severe, is probably always of autotoxic origin. There is abundant evidence of the relation of certain glands of internal secretion (thyroid, parathyroid, adrenal) to the toxemias. The liver lesion alone does not explain the urinary picture, while metabolic studies on the influence of the thyroid and parathyroid glands, show analogies to explain the urinary changes. The importance of the neurotic element may be explained by the nervous influence on glandular activity.

On the assumption that the high ammonia nitrogen, after thorough administration of dextrose by enemata, is an indication of insufficient ureagenic function, it is urged that this test be given a trial in determining the indication for obstetric interference. To further substantiate the evidence of liver destruction, the glycogenic function may be determined by the experimental production of alimentary glycosuria, using definite quantities of sugar.

The clinical picture and liver lesion are against the probability of eclampsia and pernicious vomiting being one toxic process. Whether the differences are to be explained by such additional factors as kidney involvement, loss of calcium or differences in the perversion of metabolism by glandular influences, remains to be proved.

When operative interference is indicated in the toxemias of pregnancy, chloroform is contra-indicated. The liver destruction following its use is heaping insult on injury. In view of the evidence of the relation of the thyroid, parathyroid and adrenal glands to the toxemias, a complete therapeutic trial of their extracts is urged.

FIRE ON PENIKESE.

On January 13 a fire broke out in the administration building of the Massachusetts leper colony situated on Penikese Island at the entrance to Buzzards Bay. The building was destroyed completely, but no injury was done to the inmates.

NEW DEAN OF BOSTON UNIVERSITY LAW SCHOOL.

Boston University Law School has recently suffered a loss in the resignation of its Dean, Dr. Melville M. Bigelow. The trustees have recently elected as his successor Homer Albers, a man who next to Mr. Bigelow has been most active in the interests of the department and who has a high reputation throughout New England. The school is to be congratulated on its good fortune in having such men for its leaders.

THE CAREER MEDICAL.

The long and tedious waiting period now passed, the physician settles down to a career which is probably the most strenuous in the entire category of human activities. He is a public servant, upon whom anyone may make a demand at any time. He is at the beck and call of pauper and prince; and, for reasons that are sufficiently obvious, the hours he spends with princes are few in number and separated by long intervals. Moreover, the doctor is subject to public abuse to an extent which is shared only by the crafty politician, and this after he has given his heart's blood for some, perhaps worthless, life lying at the bottom of the scrap heap of humanity. He is expected to be always in good humor, never ill, possessed of an unfailing supply of sympathy and energy, unerring in judgment, and generous to the point of giving away a fortune he does not possess. He must never show by word, look or deed that he needs money; and if he is indelicate enough to pass a hint of this sort to a delinquent patient he is immediately set down as a blackguard, a robber and, in short, an outrageously impossible sort of man.—Dietetic and Hygienic Gazette.

TAX ON BACHELORS.

The Berlin correspondent of the Journal of the American Medical Association is responsible for the statement that in the principality Reuss every unmarried man past a certain age who has no relatives dependent upon him must pay a special tax. As this tax presumably will be less than the expense of housekeeping its effect seems questionable.

DINNER IN HONOR OF DR. FINNEY.

Several months ago the name of Dr. John M. T. Finney was mentioned in connection with the presidency of Princeton University. Dr. Finney declined the honor, expressing his preference for remaining in the medical profession in Baltimore. As an expression of appreciation of this preference a number of his assistants united and tendered to him a complimentary dinner at the Belvedere Hotel in Baltimore. It is proposed to start a fund to be known as the John M. T. Finney fund for the advancement of surgery.

NEW SITE FOR PERKINS INSTITUTION.

A tract of land 34 acres in extent has been purchased by the trustees of the Perkins Institution for the Blind. It is situated in Arlington Heights. A section of the new buildings has already been begun.

REFRIGERATION IN NEW YORK HOSPITAL.

The Mt. Sinai Hospital of New York has decided to investigate the advantages of refrigerating devices for the purpose of cooling certain wards during the summer months. These cool wards will be used for the treatment of cardiac and intestinal diseases.

ONE HUNDRED YEARS OF MEDICINE IN PERU.

We are so accustomed to think of South America as a comparatively new continent that the announcement that the School of Medicine of Lima, Peru, has recently celebrated its centennial comes as a considerable surprise. This school we understand is a very progressive one, and is doing excellent work.

AN UNDERGROUND HOSPITAL.

Illinois is reported to be about to have the first underground hospital. This institution is to be started near Collinsville in connection with a large coal mine at that point.

MASSACHUSETTS HOMŒOPATHIC HOSPITAL.

The annual meeting of the corporation of the Massachusetts Homœopathic Hospital was held in January. At this time Mr. Edward H. Mason was elected to the presidency, succeeding the late William T. Piper.

Reports were presented describing the work of the various departments. In all the departments 20,571 patients were treated during the past year. Of these 5,213 were treated in the main Hospital and 401 in the Haynes Memorial Hospital. The expense of the institution for the year was $206,125; the receipts $184,958; deficit $21,167. This report marks the highest number of patients treated in the institution during any year of its history.

THE BUREAUX FOR THE PITTSBURGH MEETING.

The Journal of the American Institute of Homœopathy announces that Dr. C. E. Fisher has prepared an unusually attractive symposium for his bureau, that of Homœopathy. Among the well known men to write papers for the symposium are Drs. J. H. McClelland, R. S. Copeland, J. P. Cobb, H. H. Baxter, J. P. Rand, C. E. Walton, O. S. Runnels and W. J. Hawkes. It is also stated that the chairman of the other bureaux, Drs. J. H. Moore, W. Van Baun, B. H. Ogden and Sarah M. Hobson, will present equally instructive programs. We think that never before have preparations been made so far in advance as are being made for the Pittsburg meeting of the Institute. We hope that it will be a huge success in all ways.

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ORIGINAL COMMUNICATIONS.

CONSTIPATION.*

By Frederick W. Halsey, M. D., Lecturer on Rectal Diseases, Boston University School of Medicine.

Constipation is the "bete-noir" of our modern civilization, the direct result of our strenuous life, and the bug-bear of the busy doctor. The word constipation from the latin *con*, meaning *with* or *together*, and the verb *stipare*, to *press* or *crowd*, is here used by common consent to describe a condition of the excrement, differing from the normal, both in consistency and also in manner and time of its expulsion.

The term obstipation differs from the former in its prefix, which changes its meaning slightly, but by common consent is used to describe or define a more serious condition, dependent upon an actual narrowing of the calibre of the gut itself, due to a strictured condition or to the presence of a morbid growth in the bowel offering an actual obstruction to the passage of the fæces.

What is normal? The hard and fast rule adopted by physiologists requiring every normal human being to have an evacuation of the bowels once, or oftener, in every twenty-four hours, or be classed as constipated, has resulted in a good deal of confusion regarding the term, and not a little mischief; for no tenet is more firmly rooted in the popular mind than this, and to this fallacy alone, in my judgment, is due the reckless use and abuse of the thousand and one alluring and never failing cathartics, which "work while you sleep," and without which you are surely on the road to an untimely grave.

The term constipation is necessarily a relative one, meaning in a word, a deviation as regards the passing of the excrement from the normal. What is the normal? Many persons are laws unto themselves in this respect, and can allow an interval of a

* Lecture on Constipation delivered before the Senior Class of Boston University School of Medicine.

week or more between the movements and yet suffer no ill effects. In spite of this, Illoway says, "If a person goes more than three days without a movement from the bowels he should be classed as constipated." Is not this quite or nearly as arbitrary a rule as the twenty-four hour one? Granted that the time, regularity, or interval passing between time for defecation is largely a matter of education and habit; that once in twenty-four hours is the rule, radical departures from this rule are neither uncommon nor prejudicial to a state of perfect health. These promises will be admitted by most physicians. If this be true, in defining constipation would not something like the following be fairer or more nearly correct?

Author's definition. A condition of sluggishness in the passage of the fæcal excrement whereby the deviation from the usual or normal is sufficient to impair both the comfort and health of the individual. The regularity and time of defecation is dependent in most instances on habit, and the habit in turn is a matter of early education. Peculiar and unusual forms of diet enter into the causation of the trouble, but do not influence the abnormal condition a hundredth part as often as the acquired habit itself.

Deviation from normal habit. Accurately reported and entirely reliable instances are recorded of great deviation from the normal as regards time of retention of fæcal matter. One instance is given where the interval between defecation was extended from two weeks to four month, (Matthews, page 58); a case where the interval was eight months and sixteen days, (Amer. Jour. Med. Science, Oct. 1874); a case where the interval was once in two years, (half yearly abstract Med. Science, Vol. xxi, page 275); a case when the interval was once in three years, (Med. Gaz. London, 1843, Vol. xvi, page twenty); a case where the interval was once in 14 years, (Rec. Phil. Med. Museum, 1805, Vol. I, p. 305). I had one case in my own practice where the interval was six weeks.

While these cases are in one sense abnormalities, and can be considered in the light of medical curiosities, they prove beyond question the fact that the colon, the sigmoid, and the rectum, are all tolerant of great dilatation, and under peculiar circumstances can put up with and can take care of an immense amount of fæcal matter, without absolute injury to the health of the patient, or even resulting in death.

For convenience of description, the subject of constipation can be treated under two grand divisions — acute and chronic.

Acute constipation. The acute variety may arise from various causes. It differs from the chronic variety, as its name indicates, from its more or less sudden invasion. It may be produced me-

chanically by obstruction arising from the introduction of some foreign substance either by the mouth or rectum. The obstruction on the other hand may arise from an intussusception of the bowel, from a volvulus or twisting of the bowel on itself, or from a hernia. On the other hand this acute condition may arise as the result of some co-existing acute disease, usually of an inflammatory character, like typhoid fever, or peritonitis. Affections of the brain, like meningitis or apoplexy, are frequently responsible for the acute attacks of the malady. While these are many times serious enough to cause death, and always cause much anxiety, once an accurate diagnosis is made, which must include the cause of the trouble, a step in the right direction has been taken, and the disease is usually found amenable to proper treatment.

Chronic variety. Chronic constipation is a far more common, if not more serious trouble, coming on insiduously, the patient drifting along until the trouble is so firmly seated as to become a distinct menace to his general health, demanding the most painstaking study as to the causes responsible for its existence, and an equal amount of time and labor to effect a cure. The etiology of chronic constipation runs along in similar lines to those already mentioned in speaking of the acute variety, except that the causes are more varied and far reaching. Illoway divides these causes into four classes.

Author classifies disease into two grand divisions. In my judgment they can be put into two grand divisions, simplifying things somewhat. In the first, we should include all obstructions, malformations, and diseased conditions at the anal outlet, the rectum proper, the sigmoid and the colon. In the second division should be included all diseased conditions of the system foreign to the localized parts and to the existence of which constipation is but a result.

First variety. In the first variety will be included all cases of actual narrowing of the calibre of the gut, due to cancer, syphilis, ulceration, dysentery, an abdominal tumor like a fibroid, or an enlarged and badly retroverted uterus pressing the bowel together; diaphragms so called, being folds of mucous membrane projecting into the bowel, forming shelves or valves, more or less occluding the lumen of the bowel, adhesive bands, the product of inflammation, binding the internal coats of the intestines together. This form will include obstruction to the free passage of fæcal matter due to the presence in the bowel of foreign substances, accidentally or intentionally swallowed by the mouth, or introduced into the rectum; the presence of scybala or hardened fæces, malformations of the sigmoid, both as to size and length; extreme

flexion on itself producing a strictured condition, dilatation of the colon with great increase of its length, also diverticula of the colon. Under this class or division may be properly included diseased conditions of the colon, like colitis, of the region of the sigmoid, like proctitis, and diseased conditions of the rectum, particularly those of a painful nature like hemorrhoids and fissures which contribute so largely to the causation of constipation, and until reached and cured make the cure of the constipation well nigh impossible.

Second variety. In the second class or division from which we get constipation as a result may be included many diseased conditions of the liver, where the quantity and quality of the bile poured into the intestines is greatly deflected from the normal. In diseased conditions of the pancreas, in diseases affecting the circulation either in the lungs, the heart, or the kidneys; in many brain diseases, inducing inhibition of peristalsis through the nerve centres, and lastly, though possibly more frequent than all other causes combined, disorders of the stomach and duodenal canal, whereby normal digestion is interfered with and an aggravated dyspepsia or indigestion is produced.

In studying the causes of constipation it is not possible to ignore digestion, for it is without doubt due to the derangement of this important process that not only constipation follows but so many other ills have their origin.

Digestion. Time spent therefore in reviewing certain parts of the physiology of digestion will be well-spent. The peculiar arrangement of the muscular fiber of the intestine, with its intricate and delicate arrangement of nerve supply, on irritation, or better on stimulation or excitement due to the presence of food, allows of that peculiar involuntary movement of the intestinal canal, known as its peristaltic movement by aid of and through which the food is pushed along until it is deposited in the sigmoid cavity. This peristaltic action is produced, and furthered, by the processes of stomach digestion, before the food has entered the bowel at all. The gastric juice of the stomach, acid in character after the food has been intimately mixed with it, pours into the duodenum, where it meets the bile and pancreatic juice, both alkaline in reaction. A chemical action takes place, carbolic acid, hydrogen, and other gases are eliminated. These gases dilate the bowel, and together with the chemical reaction, undoubtedly exaggerate the peristaltic action necessary to secure the proper elimination of the waste material unsuitable for absorption. It is only when the food taken is right in character, and the various digestion fluids normal in quantity and quality, the organs themselves healthy and in good tone, that the action of the bowels can be expected to be normal.

As regards mixed diet. Careful experiment has proved beyond doubt that the human family require a mixed diet to keep them in the best of health. Instances are noted of life being preserved for many years where a radical departure from this rule, or law, has been indulged in, and the health of the individual experimented upon has remained fairly good. The fact that a person can subsist on a purely vegetable diet, or an exclusive meat diet, for an indefinite length of time and not die, by no means proves that such is best for him. Yet as far as I am able to judge this is about the only argument those favoring such exclusive diet are able to present. The fact that some persons never allow a day to pass without taking some dose, or doses of medicine, (patent or otherwise) by no means proves that such medicines are good for them, but rather furnishes an illustration of how much abuse the human system will tolerate. A beneficent Creator in imparting that vital principle into man called life, has seen fit under certain conditions to render the careless snuffing out of the same a somewhat difficult matter, else would some of us drop by the wayside. If any delicate piece of machinery made by man were tinkered and fooled with, taken to pieces and put together again, scrubbed, boiled and adjusted, as is this mortal body of ours, how would it run, and how long would it last? It has been intimated by those familiar with statistics, that the medical profession is becoming overcrowded. Why, bless my soul, from the time of Moses there have been more doctors in the world than all the other professions put together. The trite saying that "every man is his own physician" has more of truth than poetry in it. Stop a man in the street, show him your watch, tell him it is out of order and will not run, and ask his advice as to what you had better do about it, and he will naturally suggest the watchmaker, and incidentally perhaps think you more or less of a fool; but tell the same man that your liver or your lights or some other organ of which he knows far less than he does of a watch, is out of order and he will have a sure cure at his tongue's end in a moment. This is no digression but strikes at the root of some of the most prolific causes of chronic constipation, errors in, and indifference to, proper diet, and the persistent abuse of cathartic medicines being the two chief causes.

Meat diet. While an exclusive meat diet is indicated in some forms of intestinal indigestion, giving the bowels rest thereby, and while an exclusive cereal and vegetable diet in certain forms of stomach dyspepsia, cutting out albuminoids entirely, is frequently helpful, the average person needs both animal and vegetable food. He cannot maintain good health for any length of time, to say

nothing of securing regular dejections from the bowels, unless given them.

Coarse flours, etc. While coarse flour like graham, whole wheat, bran and similar cereals are excellent, and have their place in the dietary of all such cases, it is easy to overdo this form of food, and thereby unduly irritate the bowels. It falls to me during the year to see a good many cases where this habit has been acquired and next to the habitual use of cathartics, these are the most difficult to cure; for like most cathartics their action is due to their scratching and irritating effect on the mucous membrane of the bowel.

An inability to assimilate food properly, and a mistaken idea as to the amount and character of such food and drink, is responsible for a large proportion of constipated cases. The existence of the preconceived idea so firmly fixed in the average mind, and already spoken of, that a movement of the bowels must be secured every day or serious results will follow, will account mainly for that great hold on the public taken by the "three P's" and other charming cathartics.

Habit in constipation. While the change in habit of a person leading an active, out-door life, to that of in-doors and sedentary would be quite apt to lead to a constipated habit, the converse is sometimes noticed. An intimate friend and patient of my own is in the habit of making a trip into the woods, early in the summer or fall of each year. At home he leads a fairly quiet life, though not strictly sedentary. His dejections are usually regular while at home. After reaching camp where the conditions would appear to be ideal and conducive to regularity of the movements, he is so constipated that on occasions when he has neglected to take a laxative with him he has gone a week or ten days without a movement, this in spite of drinking freely of pure water, the best in the world, found in the wilds of Maine, and the great amount of exercise taken. The only way I can account for this in his case is that the unusual amount of exercise taken, mainly in walking in warm weather, causes a great amount of perspiration, and, notwithstanding the large amount of water absorbed, the water is diverted to and passes out of the skin rather than fulfilling its proper and usual duties in the intestines.

Fixed time for movement. Postponement of the time for defecation is a most prolific cause of constipation. This deferred time for attention to the act, with most of us will date back to our school days, partly from a lack of knowledge of the danger of such postponement, due in many instances to lack of instruction on this point from our parents; the hurry necessitated by a late breakfast and the consequent rush to school, that we might avoid

being late, furnish excuse sufficient for the beginning of trouble.

Location of closet. Added to this, for those of us brought up thirty or forty years ago in the country, or town, the location of the closet, which was always out of doors, furnished another common factor as a cause. When I hark back to my visits to this bank of deposit in winter, the thermometer 20 degrees below zero, the cruel wind sucking up from the deep vault beneath, the wonder is that any habit other than the most irregular one was ever established. If a definite time for defecation is not fixed on, and rigidly adherred to, the desire for a movement passes away. The rectum and sigmoid become tolerant of the fæcal mass through a dulling in sensitiveness of the nerves, and constipation becomes the rule.

Age has something to do with the constipation habit also. Very young children, and old people, are prone to it from different causes. In infants it is usually due to the diet, too much sterilization of the milk, the addition of too much lime, salts, and other errors of diet. In the aged, lack of exercise, decreased peristaltic action, and diminution of secretion, all contribute to the delayed action of the bowels.

Sex is also a factor in the production of constipation, women being more prone to the contraction of the habit than men, the disturbance due to the sexual function in woman, at the time of puberty, at the time of the menstrual period, and at the time of pregnancy. False modesty in young women contributes to the formation of the constipated habit, the wearing of corsets or very tight clothing at the waist line.

Reading at stool. More or less has been said and written against the habit of reading at stool, and it is severely condemned by many, the ground being taken that "cloacina" is an exacting procedure, and that the attempt, as one author puts it, "to empty the bowel and fill the head" at the same time, is the height of folly, that the act itself requires all the concentration of mind which the ordinary individual can give to it. To a certain extent this is true, but I must take issue with these authors on some points. There can be no question that any reading, requiring much concentration of thought, would be harmful on the ground above mentioned. The average person, however, does not take a treatise on metaphysics, or a problem in Euclid, to the closet to read, but usually a newspaper, or some equally light reading, requiring but little tax on the grey matter. To offset the possible loss of concentration of mind caused by this distraction from the main object, is the added time given to the act, if something to read is taken along. Few people are willing to give the time which nature demands, and if after the first expulsion takes place, more or less

severe straining fails to accomplish more, the thing is given up entirely. If, on the contrary, the time is now filled up for a few moments by some reading matter in hand, the peristaltic action of the bowel soon brings added fæcal matter from the sigmoid into the rectum, where it can be readily expelled. Smoking with many men is a material aid to defecation, and there is no reason to my mind for its interdiction. In fact most of us would be just as well off if it were possible to limit or confine smoking to this time and place.

Hereditary and congenital constipation. Many writers on this subject have expressed serious doubts as to whether constipation "per se" is hereditary. Personally I have attached little importance or credence to the statements of patients on this point, feeling that some other and nearer cause should be found to account for the condition. When, however, a man like Nothnagel tells us that by actual dissection of postmortem, on cases previously affected in this manner, he has been able to demonstrate an actual decrease in the size of the striated muscular fibers of the colon, being reduced from 0.5 and 1.0 m. m. to 0.12 and 0.25 m. m., and he believes such condition to have been congenital and beyond detection or diagnosis in life, we must modify our beliefs to an extent at least. We know, however, that any muscle disused for a long time will atrophy in any part of the body. If the peristaltic muscular action of the bowel has been weakened and deficient for years, and all the work usually done by the muscular coats of the bowel has been done for it by one form of cathartic after another, might we not get an atrophy which would show similar results as obtained by Prof. Nothnagel? That many cases of habitual constipation are due to a neurotic or neuresthenic tendency of the patient, there can be no doubt. Dunin and Bouveret have noted this fact and called attention to it at length. When the diagnosis is thrown back on this theory, a general atonic condition of the intestinal canal will be observed. Fleiner argues that when this constipated condition is observed in neurotic cases the retardation of the fæcal mass by the bowel is due to spastic efforts of the same. Fleiner also was one of the first to call attention to the size and form of the fæcal mass in its relation to the pathological condition present. Where the fæces are passed in rounded, hardened balls like sheeps' dung, it indicates the atonic condition of the bowel, and when the fæces are thin and more or less elongated similar to those passed in true stricture, the spastic condition is indicated. Boas, Westphalian, Rosenheim and Nothnagel confirm these observations.

Symptoms. The general symptoms induced by acute or chronic constipation are by no means pronounced and are easily confused

with the symptoms accompanying indigestion and other ailments. A heavily coated tongue, sometimes with yellow fur, but usually white, flatulence, offensive breath, with bad taste in the mouth, a heavy, tired feeling, occasional nausea and dizziness, also lack of appetite, disinclination to work or to make effort of any kind (common to some people who have not even the excuse of constipation); complete stupor has been noticed in isolated cases but could hardly be called a common symptom. As can be readily seen, the symptomatology is so meague and so readily confused with various disorders, that taken alone it has little or no value.

Diagnosis. At first thought, the diagnosis would seem a self evident proposition, but if in making such diagnosis sufficient care and thought is given to make it differential; or, in other words, if in the making of a diagnosis the cause of the constipation can be located, one of the great difficulties will be overcome and a real step towards the successful treatment of the case be taken.

In discussing the varied causes of constipation mention was made of the mechanical causes, in which were included morbid growths, strictured conditions, retroverted uteri, pregnancy, and stenosis. In making a diagnosis these causes should be entirely excluded, for if any of them are present, we have more than a case of constipation to deal with, and one in which the constipation is but a result or incident.

Results of constipation. Here again the personal element enters into the ultimate result to a great degree. There are persons, and not a few, who have been constipated for years, and who have been obliged to depend on cathartics and laxatives to effect a movement, and yet have noticed but little if any impairment of the general health. More often, however, we find that the continued necessity for the use of cathartics has required the substitution of one purge after another, with the inevitably increased dose, until the stomach and bowels have reached a point in their rebellion wherein the general health of the patient is much impaired, and any of the following conditions may prevail as a direct result of the constipation.

Auto-intoxication, due to the presence of large quantities of fæcal matter, and consequent absorption of what is commonly considered poisonous material. The possibility of this taking place is even today denied by good authorities, but the consensus of opinion is that it is possible.

Jaundice, as a result of inaction of the liver, intestinal obstruction at some point in the large intestine, due to hardened masses and impacted fæcal matter.

Diarrhœa with constipation. This apparent inconsistency is not infrequent, possibly from the irritation produced by the presence

of and pressure on the bowel of the accumulated mass and the inflammation produced thereby. This liquid condition of a portion of the fæcal matter is due, or it may be caused by the excess and irritating character of the chyme, due to imperfect assimilation of food. It finds a passage for itself on one side or other of the hardened mass, and cases are noted where a channel through the centre of the mass has been made. The stools are black, tarry in character, and although at times frequent, they lack the quantity usual in diarrhœa and should not deceive a careful observer.

Diverticulæ may be caused by prolonged constipation, the distention of the large intestine followed by the atony due to such distention, may so affect the muscular fibers of the bowels as to cause an uneven and unnatural peristaltic action, whereby such pressure is brought to bear at uneven and different points, to such a degree as to form these false diverticulæ or pouches. Such a pathological condition is serious in the extreme, and may lead to fatal issue, the true cause of the difficulty being rarely discernible except at the time of postmortem.

Ulceration may result from constipation at any point of the bowel, and constitutes a grave condition.

Dilatation, — one of the most common results of the chronic habit; this dilatation may occur and involves the whole length of the bowel, but is more common in the region of the sigmoid flexure and rectal pouch, where the distention has at times been enormous. A case is recorded, where the rectal pouch measured seventeen inches, and cases are quite commonly noted where the sigmoid is dilated to two or three times its normal capacity, and lengthened as well.

Enterolith. These are usually due to a sluggish action in the bowel of the fæcal mass, a prolonged stoppage at some point, and an excess of phosphates and carbonate of lime and magnesia and iron, either in the system naturally or taken by the patient as medicine, or in mineral waters, any combination of these causes may easily favor the petrifaction of a portion of the mass and cause the stones formation.

Proctitis, resultant from, or as a complication of constipation, is so established a condition as to require no more than mention.

Appendicitis. From the experience of my surgical friends, from my reading on the subject, and from personal experience, I am satisfied that constipation must be reckoned with as a potent factor in the causation of appendicitis, and it is my belief that very many cases are caused by the same. All surgeons are agreed that in 95 per cent. of cases where any concretion is found in the appendix at the time of operation, that concretion is a fæcal one. It certainly seems reasonable to believe that a cæcum distended

and packed with fæcal matter may distend the opening into the appendix, and through this opening fæcal matter is easily pushed. In a blind pouch such as this, extraneous matter can enter much more easily than it can get out. If the fæcal matter in the large bowel can be acted on by the mineral salts in the body and take on a calcareous condition, this can prevail as readily or more so in such a pouch as the appendix. Irritation and inflammation are now set up by this hardened mass, and appendicitis follows. If these premises be true, if constipation is one of the leading causes for appendicitis, then it is taken out of the list of simple diseases and assumes a formidable condition indeed.

Hemorrhoids and other diseases of the rectum. That hemorrhoids, fisssure in ano and many other rectal diseases are produced directly by constipation is so well known that the bare statement is all that is necessary. It can safely be said that a very large proportion of all rectal diseases are due to this cause. A chapter could be easily given to this part of the paper, but it is not necessary.

Functional disturbances of the nervous system, which list could be made a long one, are noticed as a direct result of constipation.

To sum up, we find, therefore, that constipation, although not seriously threatening the immediate extinction of life, is capable of producing too many ills or variations from the normal to be dismissed lightly or to be considered amongst the trivial ailments and susceptible of relief and cure by a simple purge.

Treatment. If it were possible to outline a mode of treatment whereby constipation could be cured without studying the causes leading up to the disease, its etiology, and differential diagnosis, it would be most gratifying and much time would be saved. This has never seemed possible, and we doubt if it is so. In the acute variety, if the usual purge, followed by copious, high enemas fail, the possibility of the varied causes already mentioned, responsible for the variety of the trouble, must be taken into consideration, and resort to surgical interference must not be delayed too long. It is to the consideration of the chronic form of constipation that our time must be given, for the disease has as a rule drifted into this form long before our services are called for.

Diet in chronic variety. The question of diet will take a foremost place in the regime to be laid out. Authors are not agreed on this subject, nor are the ideas and practice of the average physicians by any means settled on this point. Without doubt there are some who will take issue with me in my ideas on the matter, No claim can be made that any diet, however carefully laid out and followed, will of itself cure constipation. There are some facts, however, in the matter of diet which experience has taught

us and from which deductions have been drawn which are hard to controvert.

Coarse cereals do not cure. The first of these conclusions points to the fact that a diet largely consisting of coarse or unbolted flour, oatmeal, rye-meal, and similar cereals, while palliating and giving temporary relief, do not cure, but, like the habitual use of cathartics, rather tend to aggravate the trouble in the end.

Vegetables. The scond point gleaned is, that almost all vegetables having a large percentage of water in them, and waste material, not taken up by the absorbents, like summer squash, peas, beans fresh from the garden, lettuce, celery, asparagus, onions, kale, cabbage, and the like, if taken in moderate quantities and persisted in will have a tendency to promote movements of the bowels. Water taken by itself freely, will assist, but taken alone, no matter how large the quantity, will not prove sufficient.

Fruit taken with care. The third point noted, is that fruit if taken ripe and uncooked, while proving a great aid in its action on the bowels, in most cases must be given and advised cautiously, from its tendency to fermentation and the difficulty experienced by many in its digestion and assimilation.

Use of glycerine a mistake. A fourth point noted which we feel sure experience has taught us, is regarding the action of glycerine, used both internally and in form of suppositories, and advised by so many physicians, some of them very prominent in the profession. We believe it to be a mistake, and that its use is likely to do more harm than good. We believe glycerine to be a good deal of an irritant to the mucous membrane, and have known many cases where its persistent use, in the form of suppositories, has brought on inflammation in the rectum, which has required treatment for some time to relieve. Fried foods of all kinds should be interdicted; potatoes used very sparingly, cooked with their jackets on. Rice is usually not allowed, it being supposed to be constipating. This to my mind is another fallacy, and my experience goes to prove rice a very harmless vegetable, even in cases of pronounced colitis.

Method of preparing rice. That the method of preparing rice has much to do with its digestibility there can be no doubt. If carelessly thrown into water, hot or cold, and boiled and stirred until it is a soggy mass, it is rendered indigestible and unpalatable. Our southern friends, including the negroes, know how to properly prepare this dish and I shall be pardoned if I take time to give the method. A first-class grade of whole-grained South Carolina rice must be used. This must be thoroughly but quickly washed in cold water. To a cup of rice, two or even more of boiling water must be used. This is boiled hard for exactly thirteen minutes,

the rice shaken into the boiling water, and nearly a teaspoonful of salt, or about this quantity. The water is then drained off carefully, no spoon or fork being allowed to touch the rice. A tablespoonful of cold water is poured over the rice and the kettle is put on the back of the stove where there is little heat, covered and allowed to stand apart half an hour.

The rice is now thoroughly cooked, but each kernel is separate and by carefully taking out with a silver fork, can be kept so. Served in this manner rice is a delicious vegetable and easily assimilated.

Stewed fruit like prunes, apples, plums, etc., are considered good. Tea and coffee should not be used except in moderation. Butter, buttermilk, cottage-cheese, vinegar, oil, syrup, and molasses are allowed. Soda water with tart fruit syrup may be allowed, but artificial seltzer and vichy are not considered good.

Water drinking. In the drinking of water, both in the morning and at other times, cool water (not iced) is more beneficial than hot, tending more to excite natural peristalsis.

Ideal diet. The ideal diet then to our mind in an obstinate constipation, is one in which the meat shall be subordinate to the vegetables, not pushing the latter to the point of producing intestinal indigestion, but giving the patient all he can take care of comfortably. The addition of raw fruit if it can be borne by the patient, the drinking freely of good soft water, and the abstinence from much sugar.

In a large majority of cases coming for treatment, there is a decided absence of moisture in the bowels as shown by the passage of hardened fæces. The line of diet already suggested is intended to supply this deficiency. At first it often fails absolutely to do this. The patient may eat liberally of the vegetables mentioned, drink freely of water each day, and yet the excretions are as devoid of moisture as before, the stools being hard-baked. It is in such cases that the glycerine has been suggested.

Use of oil by the mouth. We believe that oil, by the mouth, will fulfill the indications better and give the necessary relief. Good olive oil, the best Italian salad oil, or, where this is distasteful to the patient, a purified petroleum oil known in the shops as white petrolatum oil, has given me great satisfaction. A tablespoonful taken before retiring each night, and possibly another during the day for a limited time, will act mechanically and give great relief to the patient, thereby helping out your diet and other measures.

Exercise. Exercise comes next in importance in our efforts to relieve constipation. Out-of-door exercise, preferably walking, horseback and bicycle riding, golf, tennis; any light work which

takes the patient out of doors and gives a certain amount of stimulus to the muscles is to be recommended.

Walking is without doubt the ideal exercise, but many persons, especially women, complain that they are not able to take sufficient to bring about any good results. Not infrequently this is due to a lack of knowledge of how and when to walk. For women particularly, a good solid thick shoe is a prequisite to walking in comfort, and it is often owing to the lack of this that they are able to do so little of it. The time of day should be regulated by the season of the year, avoiding either extremes of heat or cold. Neither immediately before nor yet just after a meal should be the time selected. A good brisk gait is always advantageous, and to have a certain definite objective point is more stimulating than a walk simply against time. Nor should a walk down town, ending in an exhausting shopping expedition, be considered an ideal constitutional.

Horseback riding comes next to walking in its tonic effect on the muscular coats of the bowel, and is to be encouraged and recommended highly.

It is very unfortunate that the popularity of bicycle riding ran such a short course, and was so frightfully overdone that the machines have been mostly relegated to the dump heap, for the bicycle certainly furnished excellent recreation, not too strenuous if taken moderately. It was a form of exercise very good for correcting constipation.

Riding or driving in a comfortable, rubber-tired, up-to-date carriage, is without avail. Were the patient willing to ride in a wagon having no springs, over the cobble stones of the city, or over the rough roads of the country, the results might be different.

There can be no question but that the automobile, with its jouncing and bouncing, has a more beneficial effect if the person driving survives other dangers long enough to give it a fair trial. For home exercise, nothing can be better than the weights and pulleys sold in the sporting houses, and intended to be fastened to the wall. By means of such an apparatus, using little or no weights, every muscle in the body can be exercised, stimulated, and strengthened, and if used regularly and judiciously not alone would this class of cases be benefited, but great good would follow to every one persisting in it.

Massage. Massage, either by the hand of an expert masseur, or as applied by aid of a vibratory machine, may supplement all previous efforts, and a case should never be discharged as hopeless, unless one or both of these means has been tried.

Electricity. Electricity may be employed as an adjunct many times with great benefit. The faradic current is the one usually

recommended, using the ball or roller electrode. While possibly the majority of cases need and are helped by the faradic current, in my practice I have found a great many who respond more quickly to the galvanic current. A sponge connected with the negative pole is applied over the abdomen, the other pole at the base of the spine about opposite, applied in this manner for two or three minutes. A rectal electrode is now inserted into the rectum, connected with the positive pole, the other in form of flat sponge being slowly passed over the abdomen for about five minutes. These treatments repeated three times a week have been followed by decided benefit.

A galvanic treatment recommended by Dr. May Cushman Rice consists in passing two flat sponges, well wet and soaped, placed three inches apart on the abdomen, connected with the galvanic current, interrupted 100 times a minute, passing over the abdomen in the direction of the colon, using from 5 to 20 m., this maintained about five minutes. The positive pole is now placed stabile over the liver, and the negative used labile as before, for three minutes. This treatment should be given daily, until there is some improvement, usually ten or twelve treatments being necessary.

The same writer speaks very highly of the electro-static wave current or surging as it is called, "the patient sitting on the side of the chair on the insulated plaform, inserts a rectal electrode with a metallic surface so made that the metal is grasped by the sphincter and is not allowed to pass higher. The jars are on switch, on spark, negative pole grounded, the prime conductors together at first, are gradually separated until there is a spark gap of six or eight inches. The treatment is painless. It produces a powerful passage which affects the entire alimentary canal. This is given for twenty minutes daily, until improvement; then every other day."

Flexion of bowel. In describing the varied forms of constipation attention was called to the fact that in some cases there was decided and persistent dropping, or sagging of the bowel, causing an extreme flexion at or near the sigmoid. Here as in some other cases, mechanical means must be called on to help out any line of treatment used. In these cases, nothing can do better service than two or more rather broad bands of common surgical adhesive plaster, firmly applied over the lower abdomen, thereby raising and straightening the elongation and flexure of the bowel. In my hands these bands of adhesive plaster have fulfilled the indications better than any tried, including even well-fitted elastic abdominal supporters. Where this support gives only temporary relief, an incision can be made through the abdominal wall, the relaxed

bowel can be lifted up and fastened to the peritoneal coat of the abdomen. At first thought, this might seem a severe operation to advise, but when the misery attendant upon a case of apparently incurable constipation is taken into consideration, in the light of modern surgery, we are fully justified in advising and doing it, if all other means have failed and we feel sure such a pathological condition exists.

Impaction of fæces. When first called to prescribe for a case of inveterate constipation, a digital examination should always be made of the rectum, that an impaction of fæcal matter easily within reach should be absolutely excluded, as a cause. Should such a condition be present, nothing can be done until the mass has been removed. Enemas are usually fruitless. Various instruments have been devised for assisting in the performance of this procedure, but nothing will do the work so harmlessly and so intelligently, as the finger or fingers. Protect the hands by rubber gloves, use the fingers as hooks, and the thing is usually accomplished thoroughly and speedily.

Taking history carefully. In taking the history of your patients look very closely into their daily habits of life. If they fall into the class of strenuous livers, you must be able to correct their manner of living, securing for the woman the proper intervals for absolute rest particularly after meals, as well as attention to other hygienic measures. If the patient is a man the cutting out of stimulants used as bracers, the excessive use of tobacco, and a reasonable let-down from the intense life led by so many of the business men of today.

Drugs. Thus far I have given no indications for the use of drugs. I speak of their use lastly, for I am satisfied in my own mind that they are of least importance in the treatment of this disease. If I were obliged to discard the adjuvants I have already called attention to, or remedies, I should throw over the drugs, and I am by no means a disbeliever in their efficacy.

In the application of our remedies, we have a distinct advantage over the old school, and yet, if our entire efforts are directed to the selection of the indicated remedy, failure to effect relief will most often follow.

If our own path is so beset with difficulties, in mapping out a treatment for constipation, what shall be said of our friends of the old school?

Hardly a day passes, but our mail, or our visiting reminder from the numerous drug houses, brings to our notice, a pill, powder, or a liquid, which at last is supposed to solve the problem. This or that new drug, or usually combination of drugs, is guar-

anteed to move the bowels surely, safely and pleasantly, and if taken persistently will cure the patient of his constipation.

Glancing a moment at the drug armamentarium of our friends of the other school it would seem as though new remedies were hardly needed. Running hastily through that delightful old practice of medicine of Dr. Thomas Watson, which is a classic in medicine, the subject of constipation is not given especial consideration and is only mentioned in connection with other diseases. The usual purgatives such as castor oil, blue pill, epsom salts, are frequently mentioned as useful in treatment. Later than this work we find prescriptions like the following in general use: "R. Pulveris Aloes, Pulv. Rheii, of each half drachm, Saponio, one scruple, Misce et cum aquæ, fiat massa, in pilulae vigenti dividenda-xx pills, two or three to be taken a day." Another, "Massae Pilularum Hydrargyri, Pulv. Aloes, Pulv. Rheii, each one scruple, divide into twenty pills, three to be taken at bedtime. Alterative, and laxative, useful in deficient hepatic secretions." Another, —"Colombœ contusae, Zingiberis contusae, of each half an ounce, Senna two drachms, aquæ bullienti, one pint, sig: macerate several hours, a wine glass three times a day or less frequently if it operates too much." Passing along to Austin Flint's Practice, published in 1868, the difficulties and uncertainties of the treatment are better recognized, more is said regarding other means than drugs to effect a cure. For drugs, Senna and Aloes have first place. Rhubarb, tincture of Colchicum, Belladonna, Nux vomica, are mentioned. Nux vomica is spoken of in the latest edition of Potter, recommended in rather small doses, drops five to ten of the tincture, in glass half full water, before breakfast and dinner. Strychnia, usually combined with other drugs, has a prominent place. Castor oil, mild and efficient; Sulphur, either alone or combined with Senna; the Sulphates, either alone or combined with mineral waters; Podophyllum, one twelfth to one sixteenth of a grain, night and morning. Senna, the base of most compounds; Mercury, the old stand-by, either as Calomel or Grey powder; Hydrastis, Magnesium bicarbonate, Alum, Aloes, Chloral, useful in neurotic cases, Ipecac, where great torbidity exists, Cocculus, with flatus, movements hard and lumpy, Turpentine, in purely atonic cases, Arsenic usually in Fowler's solution, Ammonium chloride in so-called bilious conditions, Belladonna grains, one half of the extract at night. Croton oil, the most active and violent cathartic known. Cascara sagrada, in half-drachm doses of the fluid extract, produces soft evacuations, without griping. Frangula has similar effects; saline natural waters without limit. Phenolphthalein, one grain dose, a new cathartic

put up by a leading drug house, is supposed to be reliable and harmless.

You will notice that as I run down the list, the massing together of three or four remedies is discarded in a measure, and more dependence is placed on the single remedy, and often very clear cut indications are given for the use of the same. This may be due to the influence of our school on the history and development of prescribing drugs. We like to think so at least.

If a purge must be used, and the necessity for such frequently occurs, particularly before operations, nothing can be better than castor oil. It is more thorough than any other and causes little or no disturbance after operations. Cascara sagrada, either in the fluid extract, like Parke Davis's Cascara Evacuent, ten drops at dose, repeated at four hour intervals, until results are obtained, or Cascara mixed with a good malt, such as the Maltine Company put up, a tablespoonful at night, is usually sufficient.

Personally, I have never known of the cure of a single case of habitual constipation, following the use of cathartics. The continued and persistent use of any of these so called cures for constipation will place the patient after a time in the list of incurables. The physiological reason for the failure to cure by these purgative medicines, is that most of them intended only to stimulate, produce their effect by irritation. No organ or set of organs, can suffer daily irritation without passing through a pathological change, the stomach, liver, and whole intestinal canal being exposed to such changes. Remedies given in the minimum dose, and according to the laws of similars, have far better chance to effect a cure. One most important point is if failure results, your patient is not left in worse condition then when you commenced your treatment.

From the days of Æsculapius, and before, it has been the custom to commence the treatment of all acute diseases with a purge. Our school has done much to not only show the fallacy of such methods, but the danger to the patient in following such rule. There are occasions, however, where such purge can be given with the best results and where it is really as necessary as an emetic after a poison. Our school has been criticised by ill advised and ignorant persons, because we have no drug which if given in small doses, according to our law, will move the bowels. We do not have to. The conditions which call for such relief are not diseased ones. If we find it necessary to take heroic measures we are not transgressing any law, but simply effecting a mechanical procedure called for. It is here that common sense comes in or should come in. An over distended bowel or impaction of fæcal matter at any point of the bowel or rectum is not a dis-

ease of itself, but a result or complication present in hundreds of abnormal conditions, and many times can be met mechanically by a good purgative, to the advantage of the patient and the good sense of the physician treating the case. In the great majority of cases the bowel can be unloaded safely and efficiently by a full high enema of plain water, or soap and water, and the danger of lighting up an inflammation in a bowel already irritated by the commencement of a typhoid fever, or kindred trouble avoided. In cases where an enema fails to relieve, and medicine by the mouth is difficult to give, or contra-indicated, a solution of epsom salts, thrown into the bowel given as a high enema, will often act as promptly as if given by the mouth. To effect a cure of the constipated habit, much thought may be required and much time may be consumed.

We have a dozen or more remedies having well pronounced and fairly clear indication for use in this trouble, some of them proven over and over again, by careful observers. There are comparatively few drugs having constipation as the leading result of continued use, in appreciable doses. There are a great many having it as a coexisting result, when the totality of the symptoms are taken. When the patient comes to us complaining of nothing but constipation, no claim of symptoms, to select the exact similar is often a bit difficult.

Nux vomica has held leading place for years as a remedy, advocated by Hughes, Lilienthal, and others, the indications for same being a foul taste in the mouth in the morning, ineffectual urging while at stool, little or no desire for stool, stool hard and dry, the key note for this remedy being in cases already addicted to the habitual use of purgatives. Personally Bryonia has given me better results than Nux. The indications are similar, there is no desire for stool, and the character of same is hard and lumpy, showing deficient secretion. Bryonia has an affinity for mucous surfaces, appearing to increase the circulation in same, and to stimulate the flow of lubricating mucus. It has helped me cure a great many cases, I feel sure. Opium is spoken of in the constipation of old people. The stool is hard and dry, as the Nux and Bryonia stool, but there is a decided torpor of the whole bowel, resembling a paralytic condition. It affords signal relief after lead colic. Opium ought to be the most valuable remedy we have in constipation, and yet I believe it is used rather infrequently. Hydrastis is another remedy often indicated. The tongue is coated, the mouth tastes bad, the stomach is disturbed, as also the liver, the stools are hard and coated with mucous, hemorrhoids are present. Drop doses of the tincture or tablets, one or three times a day, act very kindly. Plumbum is useful as a remedy where at

almost every effort at stool a spasm of the sphincter occurs, preventing, or at least seriously obstructing the passage of the fæcal matter, this symptoms being really the key note.

Collinsonia is applicable in cases where hemorrhoids exist as a complication and interfere with the free movements by their mechanical obstruction. It has been advised also where severe bleeding occurs, but I feel sure Hamamelis should have the preference in these cases. Calcarea carb is often found an excellent remedy, particularly in children, where the constipation alternates with diarrhœa, the stool is white and clay colored, being deficient in bile. The remedy is one that has given me very positives results, and I think very highly of it.

Lycopodium, not lower than the sixth, has given me help in elderly people given to abdominal plethora, where more gas was manufactured than was either comfortable or necessary for the proper digestion of the food. Many other remedies are found useful in the treatment of this condition, but space will not permit of their mention. An accurate prescriber will get better results than the careless man, and yet, as I have already hinted, the average case of constipation must be studied in its entirety, and if good results are expected the physician must be prepared to take advantage of, and bring into use, every adjuvant promising relief to the patient.

RADIUM IN CANCER AND SUMMARY OF THE PRESENT STATUS OF RADIUM THERAPY

was recently published in the American Journal of Dermatology by Aikins and Harrison. Among other things it says:

"In superficial cancer, which includes epithelioma, Paget's disease and rodent ulcer, radium is the treatment of election, and has a wide field of application. The technique is simple, and the results are extremely satisfactory, cure being obtained in practically every case. The apparatus is applied in a series of sittings, each of a few hours' duration, it being covered by a single layer of rubber. This produces an intense reaction, and in about a fortnight the area is covered by a new scab, which subsequently falls off, leaving a good cicatrix five weeks after treatment, and there is no subsequent telangiectasis or reaction. Deeper lesions require several stronger applications.

This method has been used by several observers, and the patients have remained perfectly healthy for several years. One case of epithelioma of the pubis is now in a condition of perfect cicatrization six years after treatment. A case of recurrent serpiginous epithelioma of the scalp is reported complicated by suppurative peripheral folliculitis developing upon a primary X-ray cicatrix, and it is stated that the area has been perfectly, healthy since the application."

BACKACHES, COMMONLY DIAGNOSED "RHEUMATIC"*

By A. G. Howard, M. D., Boston, Mass.

Patients suffering from pain in the back, hips, and thighs, are commonly met in practice, and these cases without regard to the character, location, or cause of the complaint have been so commonly diagnosed rheumatic that it may be of interest to consider them at this time. In the writer's experience, most cases of backache coming for examination and treatment have been previously diagnosed as lumbago or rheumatism, and treated by internal medication, or the local application of liniments or electricity.

What is lumbago? And what is rheumatism?

Lumbago is nothing more nor less than a myositis of the muscles of the lumbar spine, caused most frequently by a mild infection, or strain. It is of short duration, lasting, without treatment, from a few hours to three or four days. The symptoms are a soreness and aching in the lumbar region, increasing in severity with motion. Vigorous massage, the application of heat, and proper internal medication will usually produce results and the attack be forgotten. If there should be frequent attacks, or if from some other cause the backache should become troublesome for a longer period, it is almost invariably called rheumatic.

A correct and complete definition of the term rheumatism is perhaps at this time quite impossible, but enough progress has been made in the study of these cases during the last few years to justify the three common divisions, Infectious, Hypertrophic, and Atrophic.

Infectious Arthritis of the spine is the most frequently met, and the cases will vary from that of the very mild infections to the severe gonorrheal types.

Tubercular arthritis of the spine, or Pott's disease, is considered separately, as its symptoms form a distinct type, varying only in severity, and consequently in treatment, dependent upon the age and resistence of the patient, its duration before proper treatment is instituted, and the patient's home environment. The differential diagnosis of tubercular and non-tubercular infection of the spine may be difficult at first sight, or in a very early stage of the disease. But the unmistakable and familiar signs of Pott's disease soon appear, and indicate the careful and prolonged fixation treatment, with the same attention to health building which is given in tubercular infection of the lungs or other organs. (Figs. Nos. XI and XII.)

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* Read before the Boston Section of the Mass. Homœopathic Medical Society, March 7, 1912.

In Infectious Arthritis of the spine we can usually, though not always, get a history of infection elsewhere,—in the tonsils, intestines, or pelvic organs. This history, together with tenderness on palpation along the lumbar spine, marked limitation in back bending, with increase of pain, and in severe cases even swelling, redness, local heat, and palpable increase of fluid at the sacro-iliac articulations, makes the diagnosis clear.

In most cases the infection is not confined to the spine, but the shoulders, neck, hips, knees, feet, wrists, or elbows are also affected. Where the infection is severe there may be an ankylosis of a part or the whole of the spine with great disability, the results depending largely upon the character, extent, and duration of the infection and the thoroughness of the treatment applied.

Every effort should be made to arrest the progress of the infection, and after the infection has subsided and remained quiescent or cured for a time, our attention is directed toward securing as much motion as possible, that the patient may be useful to himself and family by resuming his former occupation.

Hypertrophic Arthritis of the spine is characterized by an increased proliferation of cartilage along the bodies of the vertebræ, and there is a limitation in motion in back bending, (especially in lateral bending) depending upon the extent and location of the disease. The cartilage finally becomes ossified and may produce a bony ankylosis, depending upon the extent and location of the growth.

The exact cause of hypertrophic arthritis is not known, but is certainly accompanied by a disturbed and faulty metabolism, and generally there is obtained a history of frequently repeated back strains and exposure. The treatment is directed toward increasing elimination, regular habits and rest, with fixation of the spine during the acute stage, and increasing the mobility of the spine after this stage has subsided.

Atrophic Arthritis of the spine is rarely seen and is merely mentioned here. The pathology is the reverse of that in hypertrophic arthritis and there is a thinning out and a diminished amount of cartilage. All the foregoing conditions present symptoms of backaches commonly diagnosed as rheumatic.

Of the *severe cases of trauma* of the spine, fracture of the vertebræ is quite common. Unquestionably many cases of fractured spine are not recognized by the general practitioner.

The writer has two cases now under treatment, in both of which the fractured vertebræ show clearly in the X-ray. These were not recognized and were treated by mere rest in bed, electricity and medication.

In one case a temporary paralysis resulted. In both a kyphos

appeared later, and as soon as they came under treatment, plaster jackets were applied with the spine in marked hyper-extension.

Malignant disease is occasionally met and its possibility must be constantly borne in mind when examining these cases of backache. By far the greatest number of cases of backache coming for examination are those due to *disturbances in the sacro-iliac or sacro-lumbar articulations.* Sometimes there is a well remembered trauma or strain, and again no such history can be obtained, but there is a more or less oft repeated strain due to slight occupational trauma not recognized by the patient.

Patients complain of backaches, usually definitely located at one or both sacro-iliac joints and down the sciatic nerve distribution. These cases are generally diagnosed as rheumatic backache or sciatica. Examination shows a lateral deviation of the spine, or a shoulder list, or increased antero-posterior curves with stooping shoulders and static strain.

In many cases the normal anterior lumbar curve is reduced or obliterated and in all cases the patient tries to assume a poise which will produce the least strain upon the ligaments supporting the sacro-iliac or sacro-lumbar articulations.

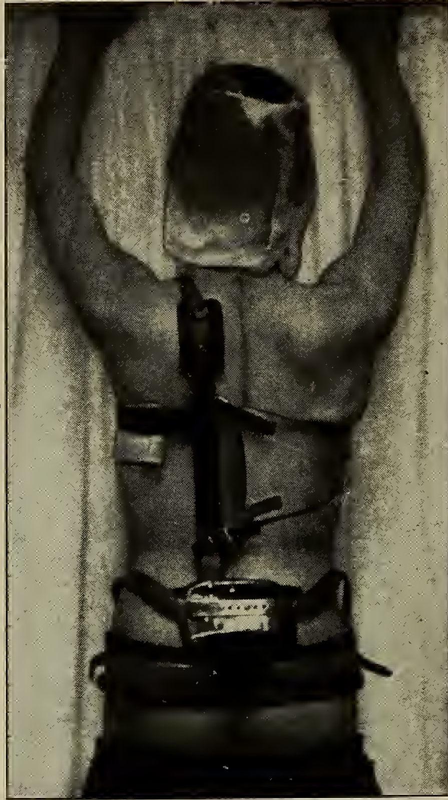
So much has been written upon this subject that the writer hesitates about going into detail and describing the anatomy of the pelvic articulations and the frequency of strain of these ligaments, with the resultant irritation of the lumbar and sacral plexus and sciatic nerves.

Palpation over the sacro-iliac articulation elicits pain and muscle spasm. Back-bending motions are restricted and painful. With the patient lying on the back with knees extended, hip flexion is limited in most cases, and accompanied by pain in one or both sacro-iliac joints. All motions are guarded and slow. Sometimes the first symptom noticed was a "slip" or "catch" in the back on stooping, after which the patient could not resume the erect posture.

In one severe case (No. 1) this "catch" in the back came on while stooping forward to fold the legs of a card table. He was seen two weeks later and he was still unable to stand erect. He was brought to the office after having had osteopathic treatments and heroic doses of aspirin, with but temporary and incomplete relief, and he suffered so severely that he used two canes in walking. The pain at the sacro-iliac was constant and aggravated with every motion. Also, there was pain, burning and numbness extending down the sciatics.

A low plaster jacket was applied with the back hyper-extended, after which the patient walked out of the office unaided and drove

his automobile home. This relief was complete until the jacket became loose by atrophy of the buttocks, hip and waist muscles. A second jacket was then applied with complete relief, and later



CASE NO. II

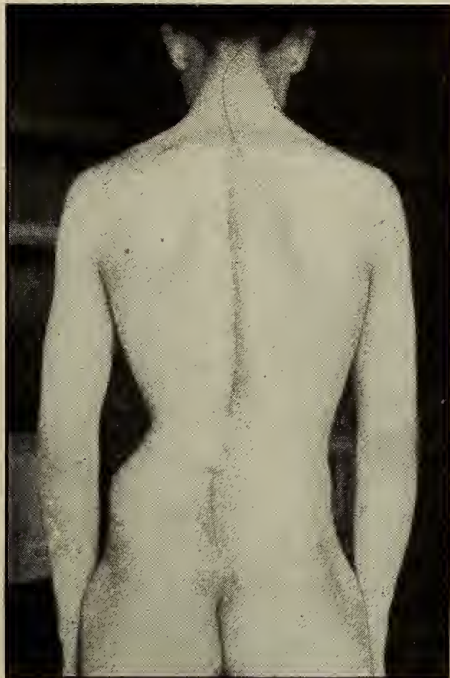
FIG. I.—Sacro-iliac displacement with Scoliosis showing corrective brace.

a brace was applied and worn for some months with a complete cure.

Another case (No. II) was that of a boy of 17 years, history negative; no trauma, complained of backache and crooked spine. Examination showed a marked lumbar lordosis and right mid-dorsal scoliosis. The spines and articulating edges of the ilia were prominent and the sacrum was depressed anteriorly.

This sacro-iliac displacement is frequently mentioned by other orthopedists, but has been a rare occurrence in the writer's experience. A plaster jacket relieved the pain, the jacket being applied after an effort had been made to replace the sacrum and reduce the lordosis. Jackets were worn for some months and then a sacro-iliac back-brace was applied with continued relief, and a correction of the abnormal lordosis. After this was accomplished we began to give more attention to the scoliosis. A single upright

was applied to the sacral brace with straps to hold the spine in as good a position as possible. At the same time exercises were given three times weekly, and these have been continued faith-



CASE III

FIG. II.—Ant. poliomyelitis, with atrophy of thigh, hip and waist muscles. Scoliosis and lordosis. Backache.

fully for two and a half years with a marked improvement in every way.

It is impossible to cover this subject properly in the time alloted to me. There are many other causes for backaches, paralysis, hip disease, one leg short, flat feet, displacement of pelvic organs, viscera, etc.

One might continue indefinitely describing abnormal conditions causing backache, and reciting interesting cases treated. I wish to call your attention especially to the necessity of a more thorough examination before prescribing treatment. (See Fig. I.)

Case III.—Boy, age 15.

Complaint—Weakness of left leg and back. Duration, 10 months.

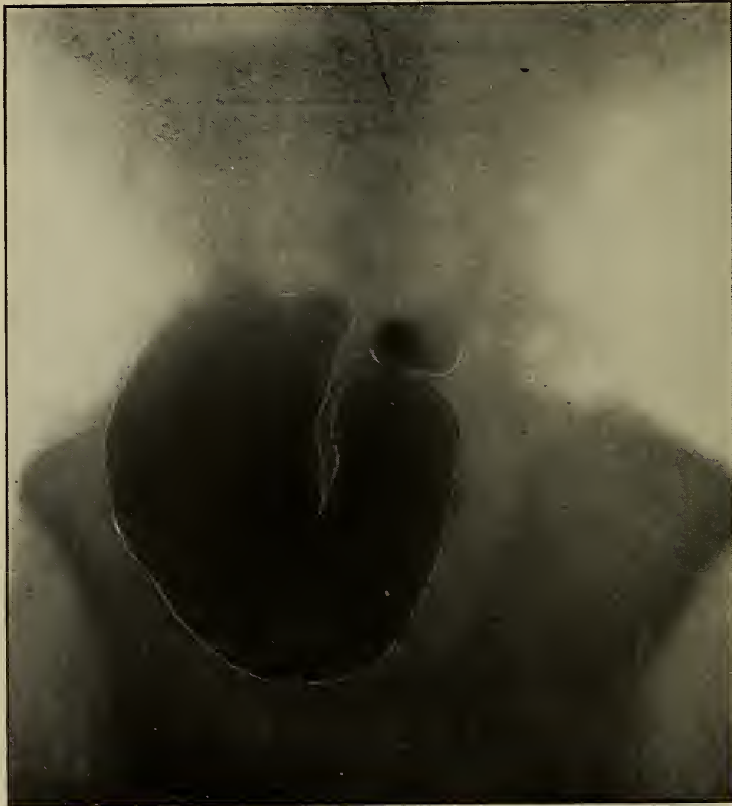
Cause.—Anterior poliomyelitis. Onset, sudden.

Present Illness.—Backache, and weakness in the left leg, which began with acute fever. Temperature high. Ten months previously confined to bed, during which time could not use the

left leg, but could flex hip slightly with heel resting on the bed. Could not adduct left leg. About four weeks after getting up, or six weeks after the beginning of sickness, was able to get about with crutches. Had massage for four months, used crutches about four months, then walked with a cane.

Past History.—General health good. Had appendicitis two years previously; no children's diseases but measles. Occasional stomach disturbances, otherwise well.

Physical Examination.—Stands with marked right low dorsal scoliosis with considerable torsion, slight left upper dorsal curve, obliteration of the normal anterior curve, and the lumbar spine was prominent posteriorly. Right body list, shoulder list to the left, walks with marked left side limp, and has considerable hyper-extension of, and outward rotation in the left knee, with weight bearing. Cannot adduct left hip, abduction good, slight power in left hip flexion, unable to raise heel from table, other motions generally good. Left ankle, calf, knee and thigh muscles on this side of poor consistency. 20 degrees limitation in ankle flexion due to contraction of the tendo-Achilles. Both great



CASE IV

FIG. III.—Visceral ptosis—Stomach with bismuth meal showing displacement below umbilicus, into pelvis. (Picture reversed laterally in cut.)

trochanters prominent, with great atrophy about the great trochanters, the waist and thigh muscles, especially left, shoulder and arm muscles apparently good, grips good, but left stronger than right. Abdominal muscles extremely weak. Exercises were given, but loss of power was so great that exercises could not be executed with benefit. A few days later a plaster jacket was applied with the patient in the hammock. Patient photographed at this time. Walked better with jacket. Back brace applied three months later. The use of the cane discontinued. Has continued exercises irregularly since this time with great benefit in strength and control. Has walked to school regularly during past winter; walks up and down stairs easily. (See Fig. II.)

Case IV.—Mrs. H. Age 30.

Complaint.—Pain in small of back, abdomen and cervical spine and right sacro-iliac articulations for over two months.

Past History.—Scarlet fever at 5 yrs. of age. Has had four surgical operations. First operation for hemorrhoids, six months later for appendicitis and the removal of part of one ovary. One and a half year later other ovary removed with ovarian tumors. Two years later another operation, removed the gall bladder with

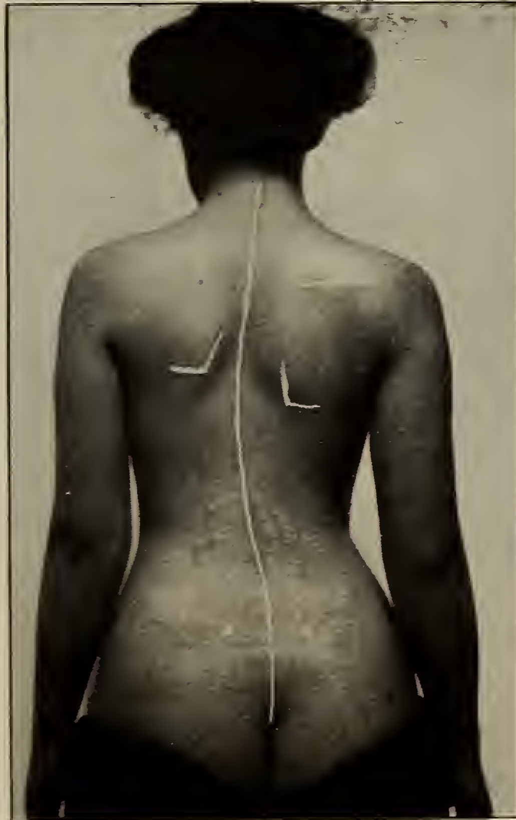


Fig. No. iv.—Showing moderate scoliosis and low shoulder due to poor standing position. Complaint—Backache.

forty-two gall stones. Has had severe falls, falling down stairs seven times. Legs give out from underneath her, but always able to walk after the falls. Has had constant nausea and vomiting after all meals for two years.

Physical examination shows woman of good flesh, rather stout. Stands with right shoulder low, long moderate low dorsal curve to the left. Stands with abdomen prominent and head forward. Right scapula prominent, some restriction in lumbar spine with back bending. Severe pain on palpation over right sacro-iliac. Examination of spine negative. Plaster jacket applied in hammock. The patient seen frequently for two months, then sacro-iliac brace with abdominal support was applied. When last seen three months ago was feeling greaty improved, no backache and no nausea or vomiting since beginning of treatment. (See Fig. III.)

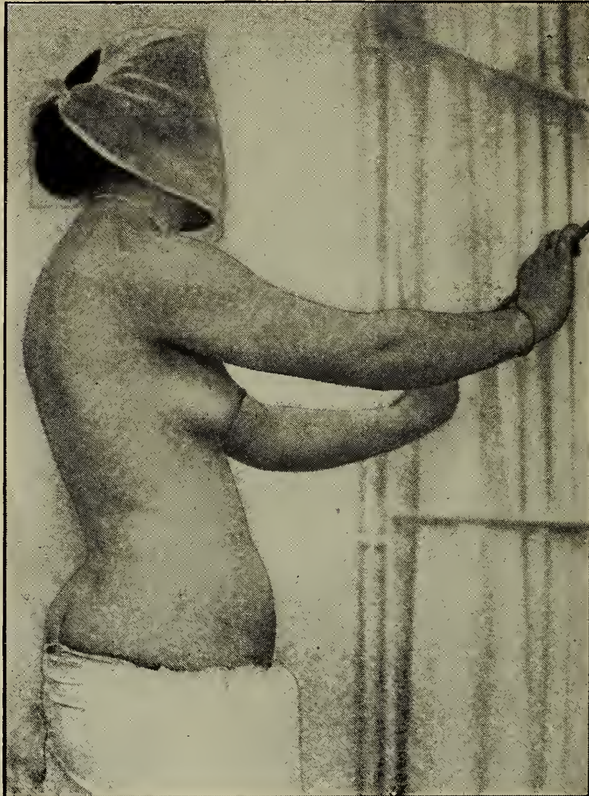


Fig. v.—Same case as Fig. IV showing prominent abdomen, sagging or droop shoulders and general fatigue position.

Case V.—Woman. Age 22.

Complaint.—Pain and lameness in the lower back, down right thigh and leg. Duration, 6 months. Onset, gradual. Cause, unknown.

Present Illness.—Began to have pain in the back of the knees

FIG. VI.—Same as Fig. IV and Fig. V showing correction by re-enforced and properly adjusted corset.

and calf of the right leg, which gradually went higher into the right hip and sacro-iliac and lumbar spine, but more pain in the back of the thigh and legs than spine. No other joints complained of. Two years ago had some pain in the long arch of the feet and wore store plates with temporary relief.

Past History.—Not well until nine years of age, when had tonsils and adenoids removed. Generally well since. Had malaria and nervous exhaustion first year at college.

Physical Examination.—Stands with shoulder list to the right, forward bending limited to about 45 degrees with increasing pain along the right sciatic nerve. Tenderness on palpation over right sacro-iliac. Side bending good, slight round shoulder. Weight 168 lbs. Long arches low. R. Back strapped and all symptoms relieved. Three weeks later corset belt and arch supports applied, with continued relief from all symptoms. Last seen one week ago and patient was absolutely comfortable.

Case VI.—Mr. C. Age 38. Manufacturer.

Complaint.—Pain in back, lower dorsal and lumbo-sacral region. Pain most severe between 4 and 6 a. m.

Duration, 3 years.

Present Illness.—Dull ache like a toothache with soreness in the spine, and a feeling of tightening of all the spinal ligaments. The pain generally disappears by 8 or 9 in the morning. Has no other aches. Appetite good, bowels normal. Married ten years. Denies gonorrhea or syphilis. No history of trauma.

FIG. VII.—Celluloid corset—worn when a light, firm, rigid support is required.

Past history.—Several times in lifting heavy boxes had a stitch in the back, which disappeared in two or three weeks. Treated by several physicians and has worn back brace with little or temporary relief. Had taken medical baths abroad and here in the city.

Physical Examination.—All back bending motions good. Slight atrophy of right buttocks. None in thighs and legs. On palpation there is a distinct difference in the tensity of the spinal muscles. Muscle of the right side somewhat softer than those of the left, otherwise examination practically negative. The usual sacro-iliac tests did not cause pain. R. The back was strapped with adhesive plaster with complete relief. Strapping was repeated.

X-rays taken, which were negative. A pelvic girdle was ap-

plied one month after beginning treatment, electric light baths given daily at home. Seen occasionally for four months, and occasionally reports a slight return of pain in the early morning. Exercises were begun seven months after beginning treatment, these exercises being given at the office and continued at home daily. There was a marked improvement, with occasional return of slight pain until January 20, 1911, when reported was 99 44-100 per cent. cured. Was wearing no support, perfectly comfortable, no backache of any sort. Later reported complete cure.

FIG. VIII.—Marked lateral curve with torsion. low shoulder—prominent scapular, and body list. A school girl of 14 yrs. Backache.

Case VII.—Dr. B. Age 32. Dentist.

Complaint.—Backache. Duration, 4 or 5 months.

Present Illness.—At first intermittent, worse at night, now more constant. Ache is present on rising in the morning, worse at mid-dorsal spine and at times in the sacrum.

Past History.—Negative.

Physical Examination.—All back motions good, examination nearly negative. Pain was due to back strain and faulty position, assumed in dental work with arms held in abduction through a long period without rest. Pelvic girdle with shoulder straps was

applied and gave relief from pain. Reported two months ago as being perfectly comfortable.

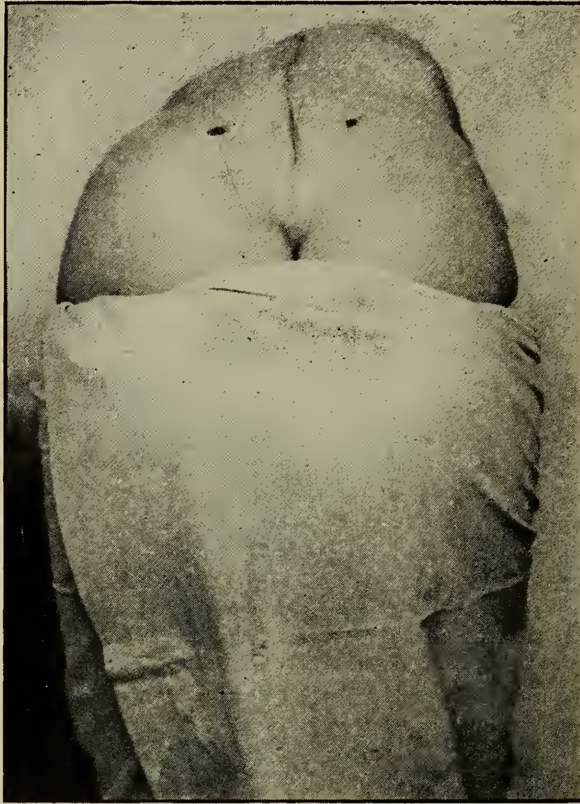


Fig. IX.—Same as Fig. VIII. Forward bending showing torsion of spine with rib deformity.

Case VIII.—Mr. L. Age 41.

Complaint.—Pain over both sacro-iliac articulations, more severe in the right.

Duration.—Several weeks.

Onset.—Sudden.

Cause.—Unknown.

Examination shows marked left body list. Restriction in all back bending. Walks and moves guardedly. Any quick motions result in a sharp catch in the back. R. The back was supported, with complete relief. Strapping repeated as required and three weeks later a steel sacro-iliac brace was applied with continued relief. Has remained perfectly comfortable up to the present time.

Case IX.—Mrs. C. Age 34.

Complaint.—Sacral backache.

Duration.— Seven years.

Cause.—Unknown.

Present Illness.—Backache intermittent until one and one-

half years ago, since which time has been constant, much worse last two months. Ache has been like a toothache. Severe at night so as to awaken patient. Awakes in the morning with backache, headache over both eyes. Eye examination negative. All backache greatly increased by walking. Had osteopathic treatments for one year without relief. No history of trauma. Can lie on back better than side. Is most comfortable with something hard like her fist placed in the small of the back.

Physical Examination.—Weight 164½. Has gained ten pounds in last two months, sixty pounds in last five years. Stands with spine normal, foot arches good. Great tenderness on palpation over right sacro-iliac, slight tenderness over left sacro-iliac, palpation of spine negative, forward bending good, but on straightening up has catch in the right sacro-iliac. Right side bending increases the pain in right sacro-iliac, abdomen large and heavy. R. Back was supported with adhesive plaster, was seen one week later and reported back more comfortable. Re-enforced corset applied, to support the sacro-iliac. Two months later reported backache same as before. Examination found that she was not wearing

Fig. x.—Showing habitual standing position of many business men after taking on considerable fat. A position of back strain.

Fig. xi.—Tuberculosis of sacrum. pat. age 27 yrs. Disease of 7 yrs. duration. Permanent kyphos.

her corset belt tight enough to give support. Belt was placed on a longer corset. This gave support with comfort. Was seen two months later and reported free from backaches. Was heard from in December, 1911, and reported back and sacro-iliac comfortable. This is a type of many cases that come for treatment.

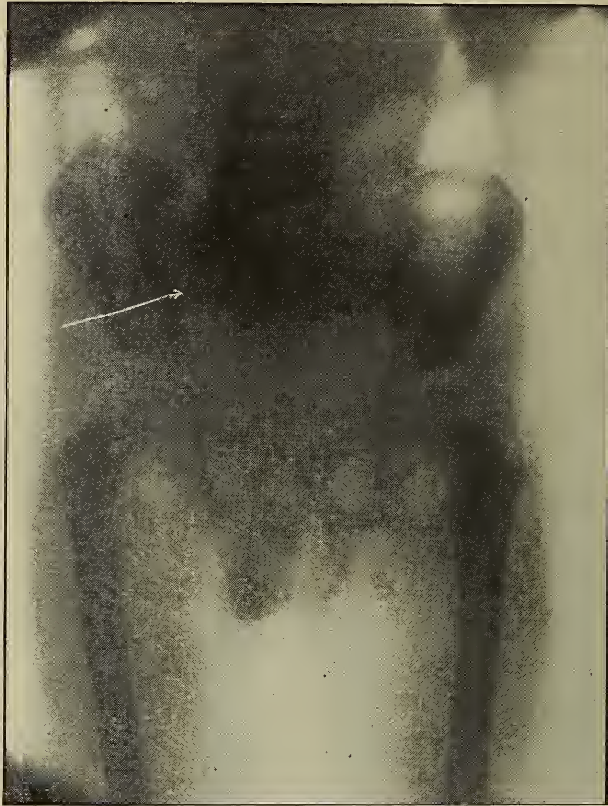


Fig. xii.—Boy of 8 yrs. Tuberculosis of sacro-iliac.

FOOT AND KNEE STRAIN.*

By Howard Moore, M. D., Assistant Orthopedic Surgeon Massachusetts Homœopathic Hospital.

I will not weary you this evening with a discourse on statics, nor am I going to explain at length the anatomical or mechanical changes that take place in the feet or knees when they become strained. It is a matter you have all heard discussed many times, and doubtless as many times forgotten.

I shall pause, however, just long enough to remind you briefly that in a sense the human body is a mechanical thing. It is designed and constructed on very definite principles of balance. As Dr. Goldthwait expresses it, "'The human organism resembles in many ways, a delicately balanced machine, made up of many parts,

* Read before the Boston section of the Massachusetts Homœopathic Medical Society, March 7, 1912.

each related to the other." What we call perfect health is the proper correlation of all these parts. As a machine, the body is intended for use, and when working rightly there is the minimum of friction, and consequently the efficiency of the individual is the greatest that is possible. Anything that results in a departure from this correlation or balance means strain and friction and represents a distinct waste of energy, so that the efficiency is lessened. Under such conditions some one part may be, and usually is, strained more than the others, but it must be remembered, nevertheless, that no one part can be strained without affecting the whole. You will all doubtless recall the very few patients who have come to you with foot strain who did not also say some such thing as "I have felt mean all over since my feet began to bother me," or "My feet have ruined my disposition," etc., etc.

To quote again: "Not only is the human machine one of extremely delicate adjustment or balance, but in its use greater variation is demanded in the character of the work performed than would be considered possible in any other conceivable mechanism." What is true of the machine as a whole applies almost as forcibly to every part.

If we have a pronation of the feet, we have a shifting of the line of weight-bearing. If this condition persists long enough, nature's efforts to restore the weight-bearing line to its proper place, produces a compensatory strain in some other joints above, either the knees, hips or spine, usually the knees, so that in almost every case of flat foot of long standing there is a knee or possibly a hip or back strain.

The feet and knees seem called upon to bear a large part of the work which the body has to perform, as they are its foundation or support, and in addition the organs principally concerned in its locomotion.

I should like to call your attention in this paper to four phases of this subject: 1—Its extent; 2—Its causes; 3—Its manifestation; 4—Its remedies.

Modern civilization has subjected the feet to such an additional degree of strain, through hardwood floors, tar sidewalks, pavestones, etc., and shoe wearing, fashionable and otherwise, that it is not to be wondered at that there are very few normal feet in adults today.

Flat foot, commonly called "broken arches" by the laity, is so common a condition that every shoe store in the country carries a stock of arch supports. The manufacture of these supports has become a tremendous business. I have been told of four different plants whose combined output totals nearly 10,000 pair daily, and I have seen over 50 different patterns besides those made by ortho-

pedic surgeons. I have seen thirty cases of foot strain in one day in the Female Foot Room of the Carney Hospital, Orthopedic O. P.D. I should almost venture to say that there are as many adults in this country today wearing some artificial means of supporting the arches of the feet as are wearing glasses.

Having thus briefly pointed out the tremendous extent of this trouble, let us consider the more common causes. If we could develop two or possibly three generations of people under such conditions that shoe wearing would be unnecessary, and where there was nothing but soil to walk upon, we would unquestionably develop strong feet, all of whose functions would be perfect. Such feet would be capable of supporting the body passively as well as of getting it about from place to place and of performing these two widely different functions without friction or strain.

I do not wish to give the impression that all foot or knee strain is due to shoe wearing, but such a large percentage of cases is due to this and this alone, and so many of the remaining cases are so markedly influenced by it that special emphasis should be directed to this cause. Shoes do a number of things which tend to produce the strain. In the first place they deprive the feet of a part of their normal flexibility. This, of course, results in a weakness of the muscles and ligaments concerned in the support and action of the feet, and tends towards the production of the static conditions, pronation and flat foot, the feet no longer being able to "stand up" and do the work required of them. The heel of the shoe throws the weight-bearing line forward so that more weight is borne upon the anterior leg of the foot's arch than it is designed to bear, and consequently more tendency to strain.

This is all granting that the shoe is a properly fitting one. Now if we have a narrow toe shoe, or a shoe too short, the toes are held together and the anterior metatarsal arch is forced downward, and we have the flat transverse arch, and the condition known as "anterior metatarsalgia." This condition is much more likely to result, of course, if there is in addition a high heel which forces the foot into the toe of the shoe. Then, too, if the shoe worn is narrower than the foot, the bearing surface is lessened, making the foundation, so to speak, that much less stable. This is especially noticeable with regard to the bearing surface of the heel.

These conditions are so much more frequent in women than in men that I shall refer more often to women. There are very few women who will admit that they are squeezing their feet by their shoes, and some are really honest in their belief that this is so; but as a matter of fact there is not one woman in a thousand who is wearing the shoe the size and shape of her foot.

In a series of over two hundred cases, a tracing of the foot,

not bearing weight, compared with the tracing of the outside of the sole of the shoe, which is very much outside of the actual space the foot occupies, showed in every instance a lateral compression. This in no case was less than 1-4 in. and went as high as 1 3-4 in. In all but twenty cases the shoe was also from one to four sizes too short.

High heels have been worn so long that women are seen very frequently who are unable to dorsiflex the foot beyond a right angle, due to the shortening of the tendo Achilles to adapt itself to the more extended position of the foot.

Now, the shoe not only mechanically produces the strains in the ways mentioned, but it favors them indirectly by the interference with the foot's blood circulation by constriction. The only thing a woman objects to in a shoe the shape and size of the foot is its appearance. However, the foot was never intended to be an ornament. It was designed for service. But as a matter of fact, is not a child's foot a more beautiful thing than a woman's when the latter possesses, say a puffiness about the maleoli, a hallux valgus with a large inflamed bunion, and a corn on the dorsum of each toe?

Next in importance to the influence which shoe wearing bears to production of the static deformities, probably comes occupation. There must be a definite relation between the time when the foot is used actively, and when it is used passively. An extreme in either direction tends to "break the foot down," as it is commonly called. Athletes who run a great deal are very often troubled with flat foot. On the other hand, clerks or others who are obliged to stand for a long period are especially prone to it.

Then we find both foot and knee strain very common following fractures in the lower extremities It makes little difference where the fracture is located. If, after union has taken place, the weight-bearing line is not exactly as it was before the fracture, there must be strain in one or more joints, and the degree of strain is directly proportional to the amount of disturbance of the weight-bearing line.

Again, in a case of knock-knee, bow legs, coxa vara or coxa valga, we must have both foot and knee strain, because these joints bear an altered relation to the weight line from what is normal, and here the degree of strain is dependent upon the nature and degree of the bone deformity.

As a final cause of these foot strains, I would refer to the important question of posture. It is obvious that any variation from the normal in this respect must be accompanied by strain. It seems to have been the custom for a great many years, especially among fashionable people, to teach their children to toe out as much as

possible, and to practice the same habit themselves. This, of course is contrary to what we know to be correct, for the foot cannot be performing its function properly and without strain unless it is slightly toed in when used actively. This position of the foot will be found more comfortable and free from strain even when used passively.

These, I think, represent the more common causes of foot and knee strain.

The symptomatology of these conditions is so extremely varied that it would be impracticable to attempt to give a complete list. The more common symptoms you are all familiar with, and I shall, therefore, call to your attention some rather uncommon and interesting manifestations.

The relation of certain back strains to flat foot has been the source of study by many surgeons, especially the relation of flat foot to sacro-iliac strain. The latter has been reported by a number of observers. Two cases which have come to my attention are of interest as being somewhat unusual.

In each case the patient consulted me for the condition in the feet. The symptoms and the physical condition of the feet were in no sense unusual, but were about what one expects in the simple cases of flat foot. Both patients reported that with the relief of the foot conditions, there came also the relief of a very disagreeable lameness and aching in the back of the neck from which they had suffered greatly, and for which aid had been sought from other physicians, and they asked me if the two conditions could be related. Questions revealed that in one instance the neck symptoms had preceded those in the feet, and in the other had followed them. The conditions, to my mind, were unquestionably related.

Frequently the symptoms due to flat or pronated feet are first felt outside of the feet. It may be in the legs, the knees, the thighs, the hips or the back.

Three other interesting cases worthy of mention had in common, a condition of profuse, foul-smelling perspiration. The first case was seen at the Carney Hospital and showed a moderate degree of flat foot. Nothing was said at the time about the perspiration. The woman reported one month later that she had been entirely free from the condition for three weeks, and expressed a great debt of gratitude. So surprising was this recovery to me that a case seen some weeks later at my office, that of a man in excellent circles, and who suffered from this condition, although he came to me for a sprained wrist, I was prompted to suggest the experiment of the same time of treatment. He had no symptoms suggesting trouble in his feet, except that they tired easily. An examination showed a rather extreme flattening of the long arches

of the feet. The experiment was readily accepted because of the humiliation his condition caused him. The restoration of the normal balance of the feet resulted in an entire relief in ten days.

The third patient consulted me about this condition, and trouble which corns caused her. She was wearing a very poor shoe. There were a number of callosities on the toe, but except for these, and the extremely foul odor of the perspiration, there was nothing unusual about the feet. This case was entirely relieved after wearing a proper shoe and a light arch support.

I am not prepared to say why this perspiratory condition cleared up with the relief of the foot strain. I have no doubt, however, of there being a definite relation. Of course we are all aware of the great frequency of the profuse or clammy perspiring of the feet in these conditions of foot strain, and these three cases may simply represent the question of degree.

A condition not at all infrequent and worthy of attention, because of its seriousness, and which is due to foot or knee strain, is that known as chronic villous arthritis. This is seen more often in the knees, but is not uncommon in the ankle. Villi are often easily palpable in the puffiness which occurs under the external maleoli. Occasionally the villi become caught between the bones, and cause sudden sharp pains, which make the patient shift his weight, in much the same way that the knee gives way when a loose cartilage or villi are caught there. The joint never becomes locked, however, and very seldom does this locking occur in the knee.

Neuralgias of the metatarsal nerves are not infrequent. They usually arise in those cases in which the anterior metatarsal arch is flattened, i. e., Morton's disease. The nerve involvement occasionally extends upward along the entire length of the leg. In some cases, the sciatic becomes involved first, following a sacro-iliac strain due to flat foot.

I have been interested to note that in a series of 75 cases of postural and structural spinal conditions, foot strain was present in some degree, either unilateral or bilateral, in 70. I feel inclined to believe neither the foot condition nor that in the spine the cause of the other, but that both are simply the results of a common cause, namely, a lack of muscular tone or strength which is more or less general. In a few of these cases, a unilateral flat foot, or pronated foot, or a greater degree of deformity in one foot than the other, has shown the curve expected in the spine, for the reason that a pronated or flat foot causes what amounts to a shortening of the leg on that side, and in turn a lateral tilting of the pelvis with its effect upon the spine.

Treatment.—I shall have more to say regarding shoes than

any other remedy, and I shall therefore briefly dispose of the other measures first.

Whatever may be the cause of the foot or knee strain, it is obvious that cause must be removed if possible. An arch support, even though properly fitted, should hardly be expected to bring relief to a strained foot if it were to continue in a shoe which was wrong in size and shape, and which did not provide a sufficient bearing surface for the foot, nor should a support be expected to bring entire relief if there existed a cause in the bones of the legs, such as a poorly set fracture or a bow leg, knock knee, coxa vara or coxa valga. We should not expect that if we remove villi from the knee we have cured the case, unless we cared for the flat foot which was the cause of the villous condition. The cause in all cases should be determined and removed.

The question of arch support is one over which a great deal of discussion and difference of opinion has arisen. There are those who advocate their use, and on the other hand there are those who believe that a flexible shank shoe, such as the widely advertised "Ground Gripper," will cure every case.

It seems to me it is all answered in these few words. If a foot is pronated or an arch is flat, it represents a weakened and strained condition of the feet and the muscles and ligaments which support them and by means of which they perform their functions. The weakness must be converted into strength and the strain must be relieved. The former can only be done by exercise, and by that I mean exercise of the nature of which the foot has been deprived, exercise such as the foot would get if used actively either bare or clad in flexible coverings such as moccasins, sandals or in a measure, the flexible shank shoe.

The strain can only be relieved by restoring the weight bearing line to its proper place. In all of these cases of foot strain there is an element of irritation which has to be considered. Of course this irritation varies greatly in degree in the different cases seen, but it is the presence of this feature which explains why so many feet have been made worse by the flexible-shank shoes which were advertised to cure. If we apply the principles used in the treatment of other joints which are irritated, we cannot, of course, increase the freedom of motion in the foot, as such a shoe would do. Of course, I am willing to admit that a great many cases of foot strain have been cured by these shoes, but undoubtedly because the condition was not exteme in degree and because the element of strain and balance was more pronounced than the irritation resulting from the strain.

It seems to me that the safest, surest and quickest plan for the permanent cure of these simple cases of foot strain is first to put

the foot into a shoe which has a stiff shank, but which is both the shape and size of the foot, one that might be called an anatomical shoe. Then the arch, if depressed, should be restored to its proper depth and held there by an artificial support. This support should be made to fit a properly corrected cast of the foot in every instance, for the reason that there are as many characteristic differences in feet as there are in faces. The support should also be as small as will produce the required result, it should be light in weight and it should have no spring. It should be considered no more than a temporary, artificial support, employed to relieve the strain. In some instances it is advisable to gradually restore the arch by graduated felt pads, before the metal support is made. As an auxiliary measure to relieve the lameness and improve the tone of the feet there is nothing better than the alternate plunging of the feet into hot and cold water, as hot as can be borne and as cold, half a minute in each, and back and forth eight or ten times.

After the irritation has been entirely relieved, the next step is the restoration of the normal strength and tone to the muscles and ligaments which are the normal supports of the feet. The patient should exercise great care to use the feet in their proper posture, i. e., the slightly toed-in position. The exercises used in the strengthening process are as follows:—

Exercise 1—Standing with the feet slightly toed in and six inches apart, rise alternately and slowly on to the toes and heels, always keeping the inner border of the feet as high as possible.

Exercise 2—Standing as in Exercise 1, roll the feet on to their outer borders, at the same time strongly flex the toes so that their ends do not leave the floor.

Exercise 3—Sitting with legs crossed, circumduct the foot through as great a circumference as possible, first in one direction and then the other.

These exercises are most conveniently done just before retiring, and, of course, should always be done with the feet bare.

After a sufficient degree of strength and tone has been recovered to maintain a proper posture of the feet, i. e., one in which the arch is high, and there is no pronation, one, in a word, in which the weight-bearing line is restored to its normal position, then if the foot is dressed in a flexible shank shoe it will unquestionably retain that strength and tone and be capable thereafter of performing its functions both active and passive without friction or strain and therefore with its greatest degree of efficiency.

CLINICAL DEPARTMENT

Conducted by A. H. Ring, M. D.

Case 3.—Diagnosis: Cerebral Syphilis.

The diagnosis was readily to be guessed from the symptoms and history, but it was definitely established by finding the Spirochaete Pallida in the blood and by the "Wassermann" serum test, which was positive. The interesting thing about the case is that "606" was administered intravenously with rather striking results. The pupils have relaxed and now respond to light, and there has been a progressive, though slow improvement in the mental symptoms. The mind-blindness has decreased, though she is still somewhat lachrymose and despondent. Her power of imagery has distinctly improved, so that she is able to recall the kind and setting of furniture in her room at the hospital and at home, with her eyes closed. She can repeat the cowboy story correctly, but does not recall what she has read as well. Simple addition she does readily (10 sums in 22 seconds). Free written association is slow (31 words in five minutes), and the content is depressing, i. e., "pain-is-dreadful," "God-take-me," etc.

Verbal association of spoken words is also retarded; given in three sets of twenty each, the average times were 1.85 seconds, 3.35 seconds, and 4.35 seconds, in this order; mean average 3.18 seconds; (normal average 1.5 seconds). This sequence also suggests easy fatigability of the subject. There were also some strikingly long reactions which showed the trend of her emotions, i. e., head—"the guide of the body" 6.2 seconds; (she thinks she is losing her head). Think;—"to try to think of anything" 14 seconds; (she thinks she is losing her memory). Mind—"to understand" 10 seconds, etc.

The associations are mostly in the form of definitions as chair "to sit in;" doctor—"physician;" or are negatives, as, cheerful—"not blue." That is, the associations do not suggest the least bit of imaginative elaboration of the stimulus word or to state it positively the answers suggest ideational suppression, either from a profound emotional depression, resulting in the fixed focus of attention upon a limited number of more or less fixed fears, (passive attention) or some circulatory change in the cortex.

In an attention test which consisted of crossing out the i's on a printed page, in a total of sixty-four i's, there were seventeen omitted in two minutes and fifty-eight seconds. Retardation is marked, and it is evident that she attends but poorly, (about three-quarters of normal). This again might be due to an emotional or

organic cause. (She knows that her illness is due to syphilis and feels it is hopeless).

One can readily see that with such data it is easy to measure with fair accuracy the progress of the patient.

Pathologically it is evident that this patient has had a specific arteritis with thrombus formation, and this must have occurred in branches of the left lenticular artery, because she has had two attacks of right *hemiplegia* with good recovery. Now the terminal branches of this same artery reach up toward the parietal cortex, which we know is the area of general (somatic and kinaesthetic) sensation and of emotions and if diseased (peniarterotes; oedema), might therefore be supposed to disturb the nutrition of this area.

Psycho-physiologically it may be assumed that our sense of well or ill being, our degree of euphoria or depression is determined by the amount and normality of sensations streaming upward from the body, and upon the normality of the central receptive areas.

Is it not fair therefore to explain the profound persistent depression in this case as the result of such disturbance. This type of organic depression is persistent,—one never finds such a patient otherwise than tearful and depressed,—and this is a marked contrast to the functional depressions, such as the blues, which are always intermittent and probably toxic.

This is the second case of this lachrymose despondency with hemiplegia of specific origin we have seen within a few months. The other did not receive "606;" she demented rapidly and died in a state of coma. The condition has sometimes been called Pseudoparesis, but this seems to Bianchi a misnomer, and with the aid of our laboratory methods should be readily differentiated from general paresis.

Case 4—C—For Diagnosis.

The case is that of a man aged fifty-two years, gray and of slight stature. The family history is not important, except that there is a tendency to respiratory diseases.

Born in luxury and pampered by a doting mother, the patient's early environment tended to further his inborn tendency to self-indulgence. Though he had no acute illness in early life he was frail and slender. He early became addicted to alcohol and tobacco, and left school for club life during his first year in college. Through the twenties, he drank more or less continuously, but with maturity came the realization of the harmfulness of such a course, and he underwent various treatments for the habit. This resulted in periodic drinking at intervals of from two to six months. For the past three years, however, he had adopted the plan of drinking from four to eight ounces of whiskey at bed time, and this enabled him

to get along comfortably and without any evidence of its use. For some years he had consumed large numbers of cigarettes daily. For the past two winters he has had severe colds which hung on persistently, with morning cough. Last fall he was noticeably feeble and languid. Just after Christmas, he developed a very severe pharyngitis which resisted all treatment, and at the same time a tumor appeared directly over and about midway of the right sterno-mastoid muscle. It was the size of a walnut, and hard. A week or so later the breath became strikingly foul, scenting up the whole house. He became emaciated and sallow, and extremely weak. Swallowing was so painful that he preferred not to eat. The tumor was meanwhile steadily enlarging, but the extreme weakness seemed to contra-indicate an operation, which he also opposed. The last of February, however, the pharyngitis ameliorated and under cocain an incision was made directly over the tumor. It was then found that the growth lay beneath the muscle in the deep tissues of the neck, and as it was not deemed wise to go deeper without ether, the wound was closed and healed by first intention. A week later it was found that the tumor was bulging into the pharynx, and although ether was dreaded, operation seemed imperative, and a cheesy, gray indurated mass partly broken down, was dissected out from the outside.

Up to this time, examination of the chest had revealed nothing but an absence of normal respiratory sounds and decided diminution of the expansive power of the chest. His heart sounds had been distant, but normal; the urine normal. Cultures from the sputum which was pussy, tenacious and foul, grew pneumococci. Throughout the entire illness the temperature was practically normal. After the ether the lungs developed loose bubbling rales everywhere, and on the third day, fine crepitant rales in an area as large as a silver dollar in the region of the right nipple.

He grew rapidly weaker, with difficult breathing, and died on the fifth day after operation.

What did the autopsy reveal?

At the February meeting of the Boston District of the Massachusetts Homœopathic Medical Society, which was wholly clinical, there were presented three unusually interesting papers. The second of these we give below, entitled :—

PRESENTATION OF A NERVOUS CASE.

Edward P. Colby, M. D., Boston, Mass.

I had hoped to present a case from the Hospital Out Patient Department which might interest you, but in looking over my private cases I found a case which interested me so much that I was

in hopes it might interest you equally, since it was of more interest to me than any case I have had for a long time in the Dispensary. I have seen but three or four like it in my experience. Unfortunately, the patient lives far away from here, in another State, and she would not appear for examination even if I wanted her to.

The patient is a woman,—married for several years. Housewife,—that is to say, takes care of her own house, with assistance. Age, 38. Has had two children, girls, in fairly good health, one 16 and the other 12. There have been no miscarriages.

Family history good, except that father died at 40 of Bright's disease. Mother is still living.

Patient was well in girlhood. At 22, however, she had some leucorrhea, which has continued to a greater or less extent ever since. She had lacerated perineum at the birth of her first child, sixteen years ago. This was repaired three years ago. She also had convulsions with the first child. I do not know whether these were uremic or not.

Five years ago patient was thrown down, striking on the back of head, but not very hard. Some distress. Rested all day in a hammock, and got up next morning without any trouble.

With her first child she had eczema badly. This may have had something to do with the neurotic history of the case.

When I saw her she was well nourished, had good color, heart sounds good, blood pressure 150, which is a little high for a person 38. What it would have been a day before or a day after I do not know. (You know this estimation of blood pressure does not mean so much as we think at the time). None of the superficial arteries were stiff or palpable. Digestion good. Menses ceased in June of the same year. At times she has urinary urgency. At other times delay, but never to the extent of incontinence or distressing delay. Naturally constipated;—obliged to take some cathartic nearly every day. Has a great deal of backache. Constant pain at 5th, 6th and 7th cervical vertebræ. Pain extends down between the shoulders, but the spinous processes were not tender at the time of examination.

Her chief trouble is an inability to walk or stand long. She cannot walk unaided any great distance, and is unable to stand for any protracted period. When she walks, she staggers, and her legs up to the thighs get weak and heavy. She does not try to walk without some one to lean upon. In standing she soon gets very much bowed over from a feeling of weakness. This weakness is in the lower part of the back, from the thighs down, so that in standing at the table or ironing board, in a very short time she gets bent over. No atrophy; station good; as good with the eyes closed as

with them open. All deep reflexes absolutely normal. No bony deviation in the spine. Pupils react to light and accommodation. Her eyes are naturally very prominent, so that the white shows above, but there are no indications of Graves' disease. She told me that the prominent eyes were a family peculiarity. No great amount of palpitation—no more than any nervous person is liable to experience. No ankle clonus. No Babinski. Sensation to touch, pressure and pain perfectly normal. She recognized the sharp points of the testing instrument perfectly.

Now, I have told you that this woman could not walk, was too weak to walk. I have also told you that there was no atrophy, no change in the reflexes, but on lying down she could make all the motions indicated for her to make, and make them too strongly for me to control—that is, her legs and feet were stronger than my arms. There appeared to me to be no connection between her accident and her condition at the present time. The accident was five years ago, and she had none of these symptoms until after the operation, three years ago, for the repair of the perineum. Later than this she had a great deal of mental stress, having lost a dear sister.

There is no evidence of muscular hypertrophy which would manifest itself by increased reflexes, or any lesion. She is of decidedly nervous makeup.

The diagnosis is that there is a functional trouble known as *ataxia abasia,* and may probably be classed among the hypercides. This is a case in which the woman cannot walk and cannot stand for any length of time without assistance, yet she is just as strong in her legs and can direct them just as well when lying down as any well person I have ever examined. This is undoubtedly a case in which the psychic influence is paramount.

* * * * * *

If this had been an organic condition which prevented the woman's walking, I should have found some indication of it, in the way of increased or diminished reflexes. I should have found atrophy. If her walking were interfered with by any disturbance in the sensory sphere, as in locomotor ataxia, the reflex would have been abolished. The eye symptoms would have been different and she could not have had perfect control in every direction, and could not have felt everything as acutely as she did. If it had been in the anterior part of the cord, there would have been flabby paralysis with atrophy, or if it had been higher up, there would have been a spastic condition; but there was nothing of this kind. There was absolutely no lesion discoverable by myself in the cord or in the brain. She was a remarkably well-balanced woman.

It is one of those peculiar cases where the treatment must be started very carefully, and must necessarily, to a great extent, be suggestive. It is a psychosis, undoubtedly, and while I advised her physician to give her electrical treatment, I am free to confess that I could see no organic reason, either muscular or otherwise, for the use of electricity. I simply thought it would be available as a suggestive measure, and I think it will. The last I heard from the woman she was not much better, but what can you expect at this season of the year, when a woman doesn't want to go out and cannot walk anyway? The prognosis I think is good.

ADDRESS BY PRESIDENT MURLIN AT THE OPENING OF THE EVANS MEMORIAL, MARCH 6.*

There are those who still doubt whether a democracy can endure. Certainly not if modern learning and scientific attainment are kept within the sacred precincts of an institution, or limited to the small circle of a chosen few. Democracy must have scientific, unselfish, clear-visioned and well-intentioned leadership; but this alone will not assure its perpetuity; there must be a general diffusion of knowledge and good-will among all the people, for thus alone will the appeal of this leadership have appreciative response.

Here is the peculiar duty and pleasure of an institution of learning. Its privileges should not be limited to the few who have direct access to its well-stocked libraries or to its well-equipped laboratories. It is well that scholars are doing their utmost at a solution of the problems of government, and are imparting their spirit to those who can gather within the walls of the lecture room. It is also good that the Church provides a stately and impressive religious service, even though the influence is felt only by those who can participate directly. But these institutions must, in a democracy, follow the injunction given by the Great Teacher, Who said that His followers must go into the highways and byways and compel the people to come in.

The value of this method of bringing the treasures of learning in literature, in science, in philosophy, to the people, and the beneficent results ensuing are beautifully illustrated in some of our western commonwealths. I think now of one whose claim to fame was, a few years ago, based upon stories of grasshopper invasion and chinch-bug devastation; of frequent havoc wrought by droughts and cyclones; of booms in real estate followed by

*Omitted from the March issue.

panics in whose sad wake all sorts of wild economic vagaries found fertile soil. But a new era has dawned; such a condition can never again exist. This change has come about through unselfish, scientific leadership to which was given intelligent and appreciative response. The State educational system, including the University, the Agricultural College and the Normal School, came to regard the entire length and breadth of the state as its campus. An obligation was felt that the privileges of lecture-room, laboratory and library should be made available not only to the students who came to these institutions for daily academic life; but that they owed an obligation also to the farmers, the merchants, the bankers, the teachers, in short the people in every walk of life. Provision was made for them to come, for a few days, two or three times each year, for brief courses of instruction in matters affecting their daily life and the common welfare. Not satisfied with this, institutes of various sorts and kinds were held in almost every town in the state, giving instruction in farm industry, home and neighborhood life; local talent was used, along with one or two lecturers from one of these educational institutions; they were men who were recognized as authority in the subjects chosen. This good work was supplemented by loaning books, scientific equipment and lecturers to high schools, literary clubs and reading circles. The railroads gladly provided train service for these economic and scientific experts, by means of which they reached every corner of the State, and gave demonstrations and lectures to the groups of people who gathered at the stations as the train stopped for an hour or so, making six or eight such towns per day.

The result of such expert leadership, in the field of agriculture for instance, is such a variety of crops that there can never be another complete crop failure in that State. The foes of agricultural products have been exterminated. The climatic conditions have changed, so that in fifteen years there has not been a drought or cyclone so severe as Boston experienced within the past fifteen months. The average per capita wealth is higher than that of any other State in the Union; while there is no individual poverty, there is no extreme wealth: there is a general diffusion of intelligence and of economic thrift; that State can never again be carried off its feet by a general wave of economic vagaries. The percentage of illiteracy is lower than that of any other State in the Union. There is more intelligence, industry, thrift, social equality and pure democracy among these people than among any other equal number of people covering a like area, I presume, anywhere else in the world. It is truly a place "where the people rule the people." It furnishes a most effective

illustration of what a democracy can attain unto where there is unselfish, expert leadership, and a general diffusion of knowledge among the people. Such a democracy is safe against all the evils that have caused all other forms of government and civilizations to decay. It is the evangelism of learning, compelling the people, by sweet reasonableness, by the light of truth, by the spirit of brotherhood, by the joy of service, to submit themselves to the laws of nature, the laws of society, the laws of God.

Boston University, located in the very heart of the City, seeks to be of the same service to the City as the State educational system is to the Commonwealth. The streets and sidewalks, through the length and breadth of the City, are its only campus; the shops, factories, industries, commercial life, churches, libraries, business life, social life—all things that pertain to the common welfare of the people of the City—provide its field of study and service. Its purpose is to bring to the people this "newer evangelism"; the evangelism of science, of learning, of philosophy, of a religion of service to all, and compel them, by the reasonableness of its appeal, its "sweetness and light," to a response to the life of science, the life of reason, the life of religion. Given the resources by which the University may render to the City a service like that rendered to the Commonwealth by its educational institutions, as above described, and a similar transformation will be seen in the City.

It is with peculiar satisfaction, therefore, that we have seen this building rise; that we now see it equipped, so beautifully furnished, ready for use. How remarkably well it is adapted to the great work of curing physical ills! But better still: it is also consecrated to the more important service of promoting the good health of the people whom it serves, by training specialists in all this work, and opening wide its doors to all for instruction in the laws of vigorous life and good health.

What a sense of joy one must have who engages in such a noble work!

Devoted men of science are soon to occupy this noble building, bringing to rich and poor alike the latest discoveries concerning the laws of life and health; what pleasure must be theirs!

What peculiar satisfaction must be experienced by this good woman, who is able to provide so comfortable a house, so beautiful a home, such an adequate equipment by which these men may render that service! We rejoice with her in this rare pleasure! The representatives of Boston University, in so far as they are related to this worthy enterprise, have boundless gratitude that in a measure it is their happy privilege to co-operate with her in her generous purpose!

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business, should be sent to the Business Manager, 422 Columbia Road, Dorchester, Boston, Mass

EDITORS:

JOHN P. SUTHERLAND, M.D.

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ARTHUR H. RING, M.D.

Reports of Societies and Personal Items should be sent in by the 15th of the month previous to the one in which they are to appear. Reprints will be furnished at cost and should be ordered of the Business Manager before the article is published.

THE FAMILY DOCTOR.

It sometimes happens that after the mourners are assembled and the obsequies about to begin the corpse suddenly comes to life and the services are indefinitely postponed. There has been much predicting and considerable mourning over the possible passing of the family physician, and the ushering in of the specialist and the salaried Medical Inspector. But the family doctor is far from being a corpse, while the present signs of the times indicate that instead of passing he is only resting, and the next generation will see him fresh from the bath of the fountain of perpetual youth, reinvigorated and rehabilitated.

Dr. Abraham Jacobi, President of the American Medical Association, in a recent speech in Boston said:

"What I want you to learn is to revere and adore the general practitioner. There are a few left of the species called family physicians. Mind what I say, in 25 years he will recover the place of honor which was his 50 years ago. It will be he who, alongside and on account of his other work, will again build characters and souls, which some of you have said is the only office left for the physician.

"You will find much to do in your social work, little things, big things. Only be sure not to rely on inspectors, male or female. Go yourselves, no money purchases eager soulful sympathy, and be always sure that an ounce of prevention is vastly better than 10,000 pounds of professors.

"Go yourselves. We report too much, we write too much, we talk too much, we wait too long. I know the old proverb that the road to a certain hot place is paved with good intentions."

Dr. Jacobi is eminently right. The family physician is not passing and will not pass but rather will become more essential to the physical and moral welfare of the individual family than ever before. It is he who has it in his power to do more for character building than any other man, layman or priest. His functions may not be the same as in the years gone by when he made his "rounds" in the old "doctor's buggy" behind the jaded horse and dispensed medicine and warnings; but it will be just as personal, just as human, just as deeply sympathetic, but far broader because more enlightened and far more powerful for good because less hampered.

The family, be it small or large, which has not that luxury, nay, that necessity, "the family physician," to whom it can turn for counsel and advice upon the thousand and one cares which perplex and annoy is indeed handicapped. Instead of needing him the less, he is needed the more because of our present day complex methods of living. Pure food laws, sanitary regulations and medical inspection are all necessary and make for better health, but the interpreter and the individual "applicator" of those laws must be the family doctor, because he is or should be so well acquainted with each of his patients that he can best individualize. The actual prescribing of medicine may be the least of his duties. But if he is of that broad mental calibre such as Dr. Jacobi describes, he will be the high priest in that family and dispense not medicine alone but good health and true morals.

If there is one person more than another who to-day needs to be told how to live it is the newly-made wife, be she rich or poor, educated or ignorant. For upon her proper knowledge depends much of the health and morals of the on-coming generations. Who can better instruct her how to live than the family physician who knows her best and probably has known her from birth? Of whom will she more readily take instruction on the matters of sexology, eugenics, family diet, climatology, and even personal dress than the family physician?

Does not the young husband need almost if not more instruction on the same subjects? If this new couple and all new couples just beginning married life would at once, even before they rented their flat, attach themselves to a wise family doctor and be guided by his wisdom we would hear less of race suicide, "female complaints" and marriage failures. All divorces do not spring from temperamental difficulties. The physical plays quite as important a part, and not infrequently ignorance and misunderstanding are the fundamental elements. Even here the high priest of the family altar could by judicious council and instruction divert many an estranged couple from the pathway leading to the di-

vorce courts. Who better than a wise family physician could handle that delicate subject of sexology to the adolescent boy and girl? Then as old age "creeps on apace" and the pitfalls of arterio-sclerosis, nephritis, gastric ulcer, cancer, taxacardia, and apoplexy yawn on every side, what is more helpful or necessary than the same educated, alert, sympathetic family doctor to steer his patient safely past the slippery places into the pathway of comfortable old age?

All this modern medicine makes entirely possible. It lies, however, in the word, "prevention," but prevention can not be applied successfully by law or force. It must be instilled into the daily life so as to meet individual requirements, and the only person who can and will do this is the educated high-minded, conscientious family physician.

We take off our hats to the family doctor both of the past and the future. May he reach and fulfil the great things expected to him!

THE LEGACY OF A LEG.

Paul said, "Though I give my body to be burned and have not Charity, it profiteth me nothing."

The time may come in which, because of charity, one may bequeath some member of his body, not to be burned, but to be used. It has long since been a demonstrated fact that foreign structures and organs can be grafted to surfaces rich in capillary circulation. A foreign thyroid gland, spleen, ovary, and even kidney structure has been grafted to the abdominal peritoneum, not only with a resultant vitality to such structure, but even with a normal functionating power.

The perfection of surgical technic has now reached a point where it is possible to unite blood vessels end to end and thus establish circulation by means of normal blood channels. The splendid experimental work on animals done by Dr. Walter M. Boothby, of Boston, as reported in the February number of the Annals of Surgery, demonstrates beyond question of doubt that it is possible to unite almost any severed blood vessel in the body with but little fear of leakage. Even the abdominal aorta of cats was severed and reunited with scarcely an appreciable morbidity.

Turning now to nerve anastomosis we find quite as brilliant results recorded in that field of surgery. Ballance, Minting, Cushing, and Elsburg have demonstrated the practicability of suturing live central nerve trunks to severed or disconnected peripheral branches and thus regenerating them into active service.

In leg and arm palsies, nerve anastomosis has been so success-

ful as to restore a useless limb, and a number of cases of Bell's palsy have been cured by nerve surgery. The accomplishments in bone surgery are twice told tales. It must be a pretty nearly dead bone which cannot be induced to unite with an adjoining bone under the persuasion of a steel plate and screws clamping the two ends together.

What does the sum total of these three successes mean? First: The possibility of establishing circulation and thereby bringing nourishment into an engrafted foreign member of some size. Second: The possibility of energizing that member with motor impulses from the brain and transmitting impressions from it to the brain. Third: Giving it sufficient stability by a direct connection with the skelital frame work to have it workable.

Completely severed fingers have been made to "grow" and become partially serviceable when there was no attempt at blood vessel anastomosis or nerve suturing.

If now we are sure of establishing a blood supply, and of affording a continuous nerve connection, and can secure firm bony union, what is there to prevent our grafting a "ready made" leg on to a waiting stump?

Given a one-legged man who is willing to take the chances of such an operation for the possible result of obtaining a new leg. Given an accident hospital where this man may go with the intent of remaining there until his chance comes. Given an accident whereby a healthy man of corresponding size and weight is brought to this hospital and soon dies. With the consent (for a liberal consideration) of the friends of the deceased his leg is carefully amputated in such a manner as to leave a surplus length of nerves, arteries and veins. At the same time the waiting single-legged man is having his stump made ready for the grafting. In the light of what has been done "piecemeal" is there any reason why this cannot be done with perfect success?

It may be popular some day to bequeath to a hospital something besides money; just the legacy of a leg. The chances are that one will not need the leg in the hereafter any more than one will need the money, and then too, most of us have legs to bequeath, such as they are.

BOOK REVIEWS.

THE MONTH'S BEST BOOKS.

Evolution of Vertebrates. Patten. $4.50. P. Blakiston's Son & Co.
Urology. Guiteras. 2 Vol. $12.00. D. Appleton & Co.
Diseases of the Nose and Throat. Thomson. $7.50. D. Appleton & Co.
Immunity. Diagnosis and Therapy. Citron. $3.00. P. Blakiston's Son & Co.

The Treatment of Shortsight. By Professor Dr. J. Hirschberg, Geh. Med. Rat in Berlin; Translated by G. Lindsay Johnson, M.D., F.R.C.S. With Twelve Illustrations. New York, Rebman Company, 1123 Broadway.

This monograph of 120 pages is the reproduction of a single lecture delivered by the author ten years ago. While more might be said in a treatise, this is certainly a very comprehensive book. It commences with a description of axial myopia, which is subdivided into Low: less than -3.25; Medium: -3.25 tc -6.00; and High: more than -6.00. The per cent of each variety is given.

Most American ophthalmologists will question the statement that "it is very rarely required to use atropine to estimate refraction," especially when the author says in the same paragraph that "children with considerable astigmia show marked increase in myopia." The other teaching about the prescription of glasses for myopia is valuable.

The various operations and injections to arrest the progress of myopia are enumerated and condemned. "Long continued abstention from close work may arrest the stretching process."

For the cure of myopia, two operations are given. Judgment is suspended concerning Müller's resection of a portion of sclera 8 or 10 m m X 20 m m.

The enthusiasm of many who do extraction of the lens is condemned, and yet the author gives a detailed statement of the vision of twenty-four of his own cases after an interval of ten years, which is extremely satisfactory. Technic is given for children and adults. Nothing new is offered for retinal detachment. For a recent case "mild measures" are advised, consisting of "rest, alternate bed and sofa." Bandage and pilocarpine injections are condemned. Sub-conjunctival injection of normal saline is advised. For the old cases scleral puncture and other methods are suggested but not with any optimism. The author's long experience extending "over three decades" makes his observations of special value.

PERSONAL AND GENERAL ITEMS.

Dr. Ida F. Barnes, class of 1893, B. U. S. M., has removed from Somerville to 81 Bank St., Attleboro, Mass.

Woonsocket (R. I.) Hospital is in need of an interne. The hospital is a general medical and surgical institution and is said to have unusual opportunities for the right man. Applications should be sent to Dr. Wm. C. Monroe, 99 Providence St., Woonsocket, R. I.

Dr. David M. Gardner, B. U. S. M., 1900, is in the employ of the National Electric Lamp Association, Department of Health and Economics, Cleveland, Ohio, succeeding Dr. Winthrop Talbot (class of '90, B. U. S. M.) as Director. Dr. Florence H. Tresilian, class of 1895, B. U. S. M., is also in the service of the same Company, as physician to the women employees.

Dr. Willard C. Welch, class of 1876, B. U. S. M., has removed from San Francisco to 638 47th St., Oakland, California.

The Boston Floating Hospital offers appointments for the season of 1912 to six internes (two senior and four junior), one each senior and junior externes, two clinical pathologists, and eight medical assistants. Applications should be sent to Dr. Henry I. Bowditch, Chairman of the Visiting Staff, 416 Marlboro St., Boston, on or before April 23.

Dr. Edwin W. Smith, class of 1901, B. U. S. M., formerly of Provincetown, Mass., after several months spent in the clinics of Vienna and Dublin, has located in Boston, at 374 Marlboro St. Dr. Smith intends to specialize in Obstetrics and Diseases of Children.

Dr. Mary E. Mosher, class of '87, B. U. S. M., has removed from 53 Blue Hill Avenue, Roxbury, to the Warren, Warren St., Roxbury.

Dr. F. D. Worcester, Keene, N. H., will receive into his home patients suffering from neurasthenia, melancholia or mild mental diseases, or convalescents. Number limited to five.

The April number of the American Magazine contains the following item regarding Dr. Almah J. Frisby of Milwaukee, Wisconsin, a graduate of B. U. S. M., class of 1883:—

"Dr. Almah J. Frisby, a practicing physician of Milwaukee, was made a member of the Board of University Regents. She was graduated from the University in 1878, and is a woman of exceptionally strong character and high ability. She remained on the Board until I (Senator La Follette) appointed her to a place on the State Board of Control of Charitable and Penal Institutions, where she has since served with great usefulness."

Dr. George Rhoads of Worcester, Mass., died suddenly on March 29. He had been in practice in Worcester for about eighteen years and had built up a large practice in his specialty in diseases of the eye and ear. A more complete obituary notice will appear later.

Dr. Lena H. Diemar, B. U. S. M., 1898, has removed from Cambridge to 62 Welles Avenue, Dorchester, Mass.

FOR SALE.—The books and instruments of the late Dr. Asa D. Smith are for sale and can be seen at his former home, 1623 Dorchester Avenue, Dorchester. Telephone: Dorchester 58-2.

The Cleveland-Pulte Homœopathic Medical College has affiliated with Baldwin University of Berea, a suburb of Cleveland. The University as now organized consists of seven departments,—the Academy, the College of Arts and Sciences, the College of Music, the Normal College, the Cleveland Law School and the Cleveland-Pulte Medical College. The college is located in a clean, wholesome, temperance town, within an hour's ride of Cleveland, and the location is said to be ideal for an educational center.

Grace Hospital, New Haven, Conn., has need of a man graduate for the coming year for hospital service. Twenty dollars per month is paid, with board and laundry, and the position affords excellent experience. For further information address, Dr. E. J. Walker, Sec'y., 1136 Chapel St., New Haven, Conn.

Dr. L. George Haskell, B.U.S.M., class of '97, has been making a short visit North, on account of the illness of his mother. Dr. Haskell is Medical Director of the new Y. M. C. A. building in Jacksonville, Florida, where he is highly esteemed.

Dr. DeWitt G. Wilcox, of Boston, is elated over the action of the New York Board of Pardons, which has acted favorably upon the application of Edward Grimmell, a prisoner at Clinton Prison. In this number appears the paper by Dr. Wilcox read before the Surgical and Gynecological Association at Narragansett Pier, in which he discusses this case and describes the operation which he performed with a view to removing cerebral pressure, which, in his opinion, was the cause of the criminality on the part of the man.

Scientists will watch this case with great interest. It is worthy of note that during the early part of his imprisonment, before the operation, which took place March, 1909, he had been refused merit marks and a parole because of constant infraction of rules, but during the past year he has had an absolutely clear record, according to the statement made by Col. J. F. Scott, Superintendent of Prisons.—March, Journal of the American Institute of Homœopathy.

The nostrums which the United States Government during the last month has fined or condemned as misbranded are the following:—

"Ferro-China Antimalarico. Ferro-China, the Anti-Malarie, Febrifuge, Upbuilder, Digestive and Strengthening tonic, was shipped in Interstate commerce by A. Saunig & Co. The defendants pleaded guilty and were fined $50."

Wells Hair Balsam. "This preparation was made and sold by E. S. Wells, Jersey City, New Jersey."

Laxative Boro Pepsin. "The Senoret Chemical Co., a St. Louis nostrum house, manufactured a product which it fancifully called Laxative Boro Pepsin. The Senoret Co. pleaded guilty and was fined $10 and costs."

Kennedy's Worm Syrup, Cherry Balsam, and Herculine Tonic. "These three products were made and sold by Dr. David Kennedy Company, Rondout, New York."

"Cherry Balsam was a 'consumptive cure' put out by the same Company and was labeled a 'harmless' preparation. The defendant pleaded guilty and was fined $100."

"Herculine Tonic was a nostrum of the cure-all type which was said to have been discovered by David Kennedy, M.D. The company again pleaded guilty and was fined $100."

Hoxie's Croup Remedy. Manufactured and sold by the Kells Co., Newburgh, N. Y. The concern pleaded guilty to the charge and was fined $50.

Coca Calisava. Sassebeer's Coca Calisaya was prepared by the Shepard Pharmacal Company.

Morse's Cream. This nostrum was put out by Hazen Morse, New Rochelle, N. Y. The defendant pleaded guilty and was fined $50.

THE USE OF VACCINES.

The best results from vaccine treatment have been obtained in cases of infections due to the pyogenic cocci. In these conditions bacterial vaccines have established their right to first place in treatment, after surgical measures. Fifty of the present series were of such a nature, four of them in diabetics, including cases of cellulitis, carbuncles, furunculosis, septicemia, erysipelas, etc. Twenty of the cases were due to the streptococcus, pure or mixed with other pyogenic cocci, especially the *Staphylococcus pyogenes aureus.* Every case of cellulitis cleared up rapidly no matter how severe. Some of the patients were saved from the necessity of having crippling operations performed upon their hands, etc., in cases of extensive cellulitis of the hands, arms, etc.—Craig in the "Medical Record."

One of the most satisfactory papers upon the outbreak of septic sore throat which occurred in Eastern Massachusetts early in 1911 was by Winslow, published in the December number of the "Boston Medical and Surgical Journal." He gives several suggestions concerning future precautions to be taken. Among other things he says:

"I am at a loss to suggest any other precautions that could have been taken to guard against infection with human germs of disease that were not taken in this instance. Excellent regulations were drawn up for the exclusion of contagion, the farms and cattle were carefully inspected, the dairy was admirably arranged and the whole process controlled by laboratory examinations under the direction of a bacteriologist and sanitarian of the highest standing. If, in spite of such precautions, the Deerfoot milk became infected, any raw milk supply may at any time become infected; and this I believe to be the lesson not only of this outbreak, but of many that have preceded it in all parts of the world."

* * * * * * * * * *

"There is in my judgment but one certain safeguard against such outbreaks,—proper pasteurization; but two things must be understood in recommending pasteurization as a general practice. Pasteurization has been too often used in the past by unscrupulous dealers to cover up milk so

dirty as to be unsaleable without it. Regulations as to sanitary inspection and bacterial counts are just as imperative for milk to be pasteurized as if it were to be sold raw, and the standards should be set just as high as economic conditions permit. In the second place, many processes of pasteurization do not pasteurize. No process should be accepted unless the milk is held at a temperature of at least 140° F. for twenty minutes."

AN INTERESTING ANNOUNCEMENT BY THE H. K. MULFORD COMPANY CONCERNING MENINGO-BACTERIN (MENINGOCOCCUS VACCINE).

Bacterin therapy is long past the experimental stage, and the immunizing effect of typho-bacterin, for instance, is thoroughly established, the results from its use being sufficient evidence of the worth of this method of controlling the spread of typhoid fever. Remarkable results likewise have followed the use of cholera-bacterin and it is hoped that equally good results will follow the use of meningo-bacterin in controlling epidemics of cerebrospinal meningitis. While immunization with Meningo-Bacterin has thus far been used in relatively few cases it is entirely reasonable to believe that it will prove a most valuable aid in the suppression of epidemics of cerebrospinal meningitis.

Like the other bacterins, Meningo-Bacterin is a suspension of the killed bacteria in normal saline solution (0.85 per cent). The cocci are grown upon a serum agar for about 24 hours, then washed off and suspended in salt solution. They are counted by Wright's method to determine the number of cocci in one cubic centimeter of the suspension, then killed by heating to 60° C. for one half hour. After dilution of the thick suspension with normal saline solution (0.85 per cent) so that the two strengths are obtained, the now completed bacterin is subjected to rigid aerobic and anerobic tests to assure the absence of live germs or spores, Guinea-pigs are also injected to be certain that there are no harmful substances in the bacterin. Trikiesol (0.25 per cent) is used as the preservative.

Meningo-Bacterin is polyvalent i.e., a number of different strains of meningococci are used.

Directions.

The usual site for inoculation is the arm at about the insertion of the deltoid muscle. The dose is given subcutaneously and not into the muscle nor into the skin. An area about the size of a five-cent piece is painted with tincture of iodine. The syringe needle is plunged through this area. No after treatment is necessary.

The complete immunization treatment consists of three doses given at intervals of from five to ten days. The first dose is 500 million, the second dose 1000 million and the third dose 1000 million.

For children smaller doses should be used according to weight. It has been suggested that the unit of body-weight for a full dose be considered 150 pounds.

Meningo-Bacterin for Immunizing is Supplied in Two Distinct Styles of Packages.

First.—For immunizing one person there are supplied three syringes, each containing the proper amount for injection, designated respectively, first, second and third doses. The first syringe contains the initial dose of 500 million killed meningococci, and the second and the third 1000 million each. The contents of the first syringe are to be injected as the initial dose, to be followed five to ten days later by the contents of the second syringe and again five to ten days later by the contents of the third.

Second.—For immunizing ten persons, Meningo-Bacterin is supplied in hospital or Board of Health packages containing 30 ampuls or ten

complete immunizing doses. The initial doses (500 million killed bacteria) are contained in the ampuls with the red label, the second doses (1000 million killed bacteria) in ampuls with the white label and the third dose (1000 million killed bacteria) in ampuls with the blue label.

In each case the first injection is 500 million (red label) the second 1000 million (white label) is administered five to ten days later, and the third of 1000 million (blue label) is injected five to ten days following the second injection.

No syringe is supplied with the hospital-size package, since it is expected that physicians using the same will employ their own hypodermic syringe, after sterilization. The method of withdrawing the vaccine from the ampul is to moisten the rubber top or cap with a drop of Liquor Cresolis Comp., U. S. P. or 5 per cent solution of carbonic acid; push the needle through the drop of antiseptic on the rubber cap, and then invert the bottle and slowly withdraw the required amount for injecting, following the instructions for the three injections necessary as directed.

The H. K. Mulford Company also supply Anti-Meningitis Serum prepared after the method of Flexner and Jobling, and they will mail upon request to the Philadelphia Office, Mulford Working Bulletin No. 8, on Anti-Meningitis Serum, giving a detailed and impartial review of the literature.

ANNOUNCEMENT CONCERNING BOSTON UNIVERSITY SCHOOL OF MEDICINE. 1912 CLINICAL WEEK

The favorable reception which has been accorded "Clinical Week" by the profession since its inception several years ago encourages the Faculty of Boston University School of Medicine once more to offer a week of special clinical lectures and didactic exercises to the graduates of the School and to the profession generally.

The objects of "Clinical Week" are:

I. To present to all who may be interested an opportunity to acquaint themselves with the facilities possessed by Boston University School of Medicine to impart the essentials of a sound and practical medical education, and an opportunity to all who desire to familiarize themselves with the latest advancements in medical science and art.

II. To give the graduates of the School, to whom "Clinical Week" is a sort of "Old Home Week," an opportunity to revisit the scenes of their student life and to note the changes which the intervening years have wrought—to renew old and familiar associations—to meet the newer generation of graduates—and to study the latest developments in diagnostic, therapeutic and surgical methods.

The close affiliation of Boston University School of Medicine and the Massachusetts Homœopathic Hospital, with its superb opportunities for in-patient and out-patient experiences, results in a combination of educational privileges equalled by only a few of the more fortunate medical schools of the country.

The exercises of "Clinical Week" will be held in the Medical School of Boston University, in the main Hospital and in the Out-Patient Department. Opportunity will be offered during the week to inspect the equipment of the latest addition to the Hospital, the Evans' Memorial Department for Clinical Research and Preventive Medicine.

The course will be given during the week beginning Monday, June 3, and will consist of six exercises each day. As on previous occasions, the exercises will be open to such members of the medical profession as may wish to attend. No fee will be charged. All are cordially invited to attend.

Applications should be addressed to

Frank C. Richardson, M. D., Registrar,
80 East Concord Street,
Boston, Mass.

LECTURE COURSES AT THE EVANS' MEMORAL.

The Massachusetts Homœopathic Hospital, Department of Preventive Medicine, announces the following course of lectures on "The Physician and the Community," to be given at the Evans' Memorial Building, East Concord St., Boston, evenings at 8 o'clock.

Tuesday, April 2nd
Dr. Richard C. Cabot, Harvard Medical School,
"The Social Duties of the Physician."

Tuesday, April 9th
Dr. W. C. Hanson, The State Board of Health,
"The Prevention of Contagious Diseases."

Thursday, April 11th
Mr. Meyer Bloomfield, Director of the Vocation Bureau,
"Occupation and Health."

Tuesday, April 16th
Dr. H. Sterling Pomeroy, Boston,
"The Specialist in His Relation to the Community."

Tuesday, April 23rd
Mr. Max Mitchell, Former Supt. Federation of Jewish Charities of Boston,
"The Physician and the Immigrant."

Tuesday, April 30th
Mr. Thomas Jordan, Sanitary Inspector, City of Boston,
"The Physician and the Housing Problem."

Tuesday, May 7th
Dr. Harry Linenthal, The State Board of Health,
"The Prevention of Occupational Diseases."

Physicians, Medical Students, and all others interested are cordially invited to attend.

In addition to the foregoing, the following lectures or health talks are arranged for evenings in April and May.—

Saturday, April 6th
"What to Eat and Why," J. Arnold Rockwell, M.D.

Saturday, April 13th
"Body Building," Alonzo G. Howard, M.D.

Thursday, April 18th
"Home Nursing," Edna Blanche Averill, M.D.

Saturday, April 20th
"First Aid in Emergencies," Clarence Crane, M.D.

Thursday, April 25th
"Care of the Eyes," David W. Wells, M.D.

Saturday, April 27th
"Public Sources of Contagion," Nelson M. Wood, M.D.

Thursday, May 2nd
"Care of the Skin," A. Howard Powers, M.D.

Saturday, May 4th
"How to be Sane and Steady," Frank C. Richardson, M.D.

Thursday, May 9th
"Care of the Teeth," Leroy M. S. Miner, M.D.

Saturday, May 11th
"Taking Cold," George B. Rice, M.D.

Thursday, May 16th
"Care and Feeding of Babies," J. Herbert Moore, M.D.

FOOD EXPERTS COME HIGH.

When Dr. Harvey W. Wiley began treading on the toes of "Poor Food" manufacturers, a board of experts was created to pass upon some of his decisions. In two and a half years this Board has decided that Dr. Wiley was wrong on the benzoate of soda question but right in condemning saccharin. It has cost the public a good deal to learn that there is a difference of opinion as to the harmfulness of the use of benzoate of soda in foods, as may be judged from the following salary and expense accounts from March 1908 to December 31, 1909: Dr. Ira Remsen, $11,361 salary and $4,040 expenses; Dr. Russell H. Chittenden. $13,709 salary and $5,769 expenses; Dr. Christian A. Herter, $9,822 salary and $3,518 expenses; Dr. John A. Long, $15,685 salary and $8,473 expenses; Dr. A. E. Taylor, $9,732 salary and $4,419 expenses. Since 1909 $60,000 has been appropriated each year for salary and expenses.—North American Journal of Homœopathy.

THE HUNTERS' TOLL.

During the first ten months of the year 1911 the United States Biological Survey reports the death of 47 men killed by hunters who mistook them for deer. The largest number of deaths was in Michigan, fifteen, New York having nine, the second largest number.

COLON BACILLUS INFECTION.

A very full and complete article upon the above topic is contributed by Kemp to a recent number of the Boston Medical and Surgical Journal. In his general summary of treatment he says:

(1) Urotropin and sodium benzoate aa. grs. x every three hours by mouth; by rectum, if there is vomiting or coma.

After prolonged use, if excessive acidity, with irritation, omit the sodium benzoate and give Vichy or potassium citrate with the urotropin.

Subsequently regulate the urine so as to be neutral, or faintly acid.

(2) Autogenous vaccines, especially if the infection is chronic, or does not respond to treatment, are of value.

Begin with 100,000,000 of the vaccine bacilli, increasing to 300,000,000 to one billion, gradually, first every two or three days, or larger doses at longer intervals,—four to seven days.

(3) Lactic acid bacilli tablets should be given internally.

(4) High enemata, 1-1,000 acetozone, every day, and later every other day.

(5) Sour milk diet, later cereals, etc. Avoid red meats.

(6) Bowels should be opened at once by calomel or blue mass, and then regulated carefully every day.

(7) Dudgeon recommends the use of anti-bacillus coli serum in doses of 25 ccm. spread over seventy-two hours, but so far the method has not been sufficiently tried to recommend it."

CAUSES OF DEATH OF DOCTORS.

Statistics compiled for the year 1911 show that there were 2,145 deaths among physicians in the United States and Canada. This is a death rate of about 15.3, which is the lowest that has been reported since 1903, when it fell to 13.7. The chief causes of death are given in the order named: Cerebral hemorrhage, cardiac lesion, senility, pneumonia, external causes, and nephritis.

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ORIGINAL COMMUNICATIONS.

A NEW DEPARTURE IN CLINICAL TEACHING.

By Frederick B. Percy, M.D., Professor of Clinical Medicine in Boston University School of Medicine.

"Innovations," said Lord Bacon, "are the births of time," and nowhere in the domain of education is this truth more apparent than in medical teaching. Some few of us remember when the preceptor plus the medical school were the two factors in medical training. More of us recall that time when the medical school plus the preceptor were the important factors, and those of the present generation have forgotten that the preceptor ever played any part in the education of the physician.

Some years ago, by edict of the Faculty, the thesis ceased to be a part of the medical curriculum of Boston University. That it had continued for so many years as one of the requirements for graduation proved that it accomplished some purpose. The most serious objections to it were based upon the fact that one member of the Faculty read the thesis and that its reading was not public. One of its advantages was that it gave to those who were teaching a better understanding of what had been gained by the students during their years of work.

Some three years ago an attempt was made to utilize its advantages, and the students of the Senior class were assigned topics of general interest which they were to present before their own and the Junior class. The work was taken up with a good deal of zeal, and at once we realized that from the fact that the papers were read before two classes pride was stimulated to do something wholly creditable. One very important feature which has emphasized its value was that at the conclusion of the reading of the essays, members of the profession whose knowledge of the subject under consideration made their opinions authoritative, were asked to discuss the papers, and this discussion has been looked forward to and thoroughly enjoyed. Just here let me, in behalf of the University, thank those physicians who have out of

their busy lives given to our students, freely and generously, an hour of their valuable time.

A few of these papers are presented in this number to the readers of the *Gazette*. They show what has been accomplished and how thoroughly the students have profited by the opportunities which Boston University School of Medicine gives them. We believe these essays will interest every graduate of the School, and we hope that those who are interested in the subject of medical education may read them with interest and profit.

UNCINARIASIS.

By Hafiza Ameer, Member of Senior Class, Boston University School of Medicine.

In discussing this subject it seems proper to begin by saying a little of the history of this until recently little known disease. Although no doubt it has existed for a long time, yet as its symptoms are rather easily explained by other conditions the actual cause has been overlooked.

It was only a few years ago that Dr. Stiles published his work on the uncinaria, but as early as 1782 a German zoölogist, Frœlich, had described the hookworm found in animals. Later, in 1843, Dubini, an Italian, described a species found in man to which was attributed the anemia found among bricklayers, excavators and the poorer rural population.

Even then, not much attention was paid to the matter till 1879, when an epidemic occurred among the workers of St. Gothard tunnel. The disease was given the name of "tunnel disease," but investigating minds were not satisfied till they found its cause. It was then discovered that on account of the neglect of personal hygiene and lack of sanitary conveniences among the workers, the disease rapidly spread, as the soil was heavily impregnated with the ova and larvæ of the hookworm.

In 1881, Bozzolo suggested the use of thymol in the treatment of uncinariasis.

At that time, it was learned that the disease was prevalent in tropical, subtropical and even in some temperate climates. Italy, France, Germany, Egypt, Guam, Malay, Japan and Porto Rico were infected with the parasite, and England, finding that she was not free, was carrying on measures for the treatment and prevention of the disease. In the United States, especially the Southern part, the anemias were explained as "cotton-mill anemia," and by malaria and poor food. But when the work of Bozzolo and

the stories of hookworm epidemics became generally known, the more advanced physicians were closely watching their chance.

Dr. Stiles had been studying intestinal parasites, especially in animals. He found that hook worms produced a very severe and fatal anemia especially in sheep. He then became convinced of the possibility that the Southern anemias might be due to the hookworm, and he was trying to get the profession to see it in that light.

Dr. Smith, professor of pathology in the University of Pennsylvania, who was also interested in the subject, found the eggs of the hookworm in a patient and was awaiting a case in which he might demonstrate the worm itself. The case came soon after.

When Dr. Stiles found that Dr. Smith had discovered a hookworm in a hospital case, he sent and obtained a sample, and having samples of the other hookworms, observed that America could boast of a hookworm of her own. He demonstrated that the parasite he was studying was not the Old World organism, and he called his uncinaria americana in contradistinction to anchylostonia duodenale, the Old World hookworm.

Dr. Stiles then published his work on the subject and began his campaign against the hookworm, which he called necator americanus. At first the papers made a joke of the subject. Dr. Stiles, finding that these poor whites of the South were not lazy, but were really sick, pleaded for them for the removal of the cause which he was convinced was at the root of the trouble. Finally his appeals were listened to, and now we find the work against the hookworm very systematically and effectively carried on not only in the Southern states, but also in Porto Rico.

Now to come back to our subject proper, uncinariasis is a specific zoö-parasitic disease caused by hookworms (genus uncinaria) which inhabit the small intestine.

Other terms than uncinariasis are applied to the disease, such as tunnel disease, cotton-mill anemia, miners' anemia, tropical chlorosis, etc., but most of these are not technically correct. (I may say here that I will from now on confine my discussion mostly to the uncinaria americana and say little of the Old World parasite.) The male parasite is from 7 to 11 m.m. long, and the female 10 to 18 m.m. The body of the worm is cylindrical, tapering to a point at the caudal extremity in the female, but in the male terminates in a fan-like expansion which is called the bursa and which contains so called rays or spines. The mouth capsule is small and globular and its orifice rather quadrate. There are no teeth on the free edge, but two broad lips—dorsal and ventral—extend inward to and beyond the edge of membranous lip. The base of the larger of the lips reaches from the ventro-median line about

two-thirds the distance to the ventral lip. They cover two cutting plates. There are two pairs of ventral teeth, the lower pair small and conical, and a blunt conical dorsal tooth projecting into the capsule. Through it passes the duct of the dorsal œsophageal gland. Near its base on either side there is a chitinous plate.

By means of these sharp teeth the parasite pierces the mucosa of the intestine and by a strong muscular œsophagus sucks the blood of its host.

The female deposits its eggs in the intestine. These do not develop there but are excreted and may be found by examination of the fæces to be ovoid bodies, 65 by 38 microns. They are segmented and enclosed in a transparent capsule. Under favorable condition they hatch. Moisture and oxygen are required for the embryo to develop.

The larvæ go through five stages before becoming adult worms. It requires from seven to nine days, depending on the amount of temperature and moisture, before getting to the stages of the second ecdysis, in which stage they are encysted and are infective. Upon drying, the larvæ die, but from experimental work it was found that they may live for thirty or more days in water. Sandy soil is more favorable to the growth than clay soil. The mountainous regions are usually heavily infected. After entering the body the larvæ undergo more ecdyses, casting its skin once after entering, and some of its organs are developed but still not fully so. Still another ecdysis is gone through and the worm is fully developed but not yet the size of the adult worm. It is thought that the parasites require from four to six weeks from the time of infection to full maturity.

Mode of infection.—It is an established fact that the disease is contracted in a few cases by the mouth, but in the majority of cases infection takes place through the skin. The larvæ in the encysted stage have a spine at one end by which they bore into the skin, from whence they get into the blood stream. Then they pass through the heart and reach the lungs. Piercing the lung tissue they travel up the trachea (causing on their journey bronchitis and sore throat, even pneumonic-like symptoms); from there they go down the œsophagus to the stomach and intestines.

Sources of Infection.—Water and soil, also food, may become infected and become a source.

Causes.—The causes of uncinariasis are, of course, first of all the parasite. But the disease is prevalent because of *lack of sanitary conveniences.* The eggs, which are present usually in large numbers in the excreta, go to infect the soil which becomes the infective agent.

Age.—Infection may occur at any age. Children going barefooted will contract the disease, and men working in the soil will also become infected.

Sex.—It is said that women are more commonly infected than men on account of their work around yards and homes. And since boys and girls go barefooted in that part of the country they are both exposed to infection in the same degree. Babies become infected while sitting on the ground to watch the older children play, or while the mother is working in her yard watching the baby while she works.

Race.—Negroes are more commonly infected than the whites, according to Dr. Stiles' statement, but with less severe effects. Other authorities on the subject claim that infection is more common in the whites. But all agree that the negroes are more immune to the effects of the disease than the whites.

Geographical locations.—The parasite is present in most of the Southern States from Virginia at the Potomac to Florida and Texas. California has shown that infection is present there, and in fact we find the disease prevalent in almost all the mining district more or less.

Symptoms.—In order to give a clear idea of the disease, it has been divided into the mild form, the medium and the severe. In all cases there are two stages, the cutaneous stage and the intestinal stage.

As regards the cutaneous stage, we find, as was mentioned above, that the larvæ may gain entrance through the skin. Now as they enter through the skin they cause what is called in the south "ground itch," "toe itch," "dew itch," "dew poison," etc. This is a dermatitis at the site of the infection.

The mild form.—In this form the infection is very slight, there may be but a few hookworms. If infection occurs when the patient is young—the patient grows up to be undersized. There may be epigastric pain which is not marked and not constant. In many cases there are no apparent symptoms but the patient is simply not up to the mark. It is reported that in a number of cases where there were practically no symptoms of an infection with the hook worm, and a number of cases with no infection living under the same condition, the infected were found to be undersize and underweight.

The medium form.—In this form the disease is usually marked, offering little difficulty in diagnosis. The anemia is well marked. The face is pale, the mucous membranes show marked loss in color. Perspiration is decreased. There is a dirty yellow tongue.

The patient appears much older than he is. The children are dull at school, and do not enjoy play as does the normal child. There is pain in the epigastrium more or less severe. There are headaches, sometimes dizziness. In later life the infected person is not able to do a normal man's work. He has not much ambition, but still is able to work though he gets tired easily, and a certain amount of dyspepsia is present. Constipation is very common but diarrhea may be present. The appetite is usually increased but in many cases somewhat perverted.

The severe cases.—In addition to the above symptoms there is that "tallow skin," the anemia being very severe. There is the empty, cadaverous stare. Dyspnea is very marked; palpitation is present. There is edema about the face. In many cases ascites is present, so called "pot belly." Children are dwarfed so that a case of twenty may appear to be a child of fourteen. The appetite is perverted so that dirt eating is resorted to. Memory is impaired. The children become so dull that even simple questions are hard for them to understand. Many times these patients are very sleepy and they find it hard to keep awake even for a few hours of the day.

The blood symptoms.—According to the severity of the infection, we find the condition of the blood. In very severe cases the hemoglobin is twenty to thirty per cent. The red discs may be below one million. As a rule the hemoglobin is lowered before the discs show any decrease. The leucocyte count is high, possibly reaching fifteen or twenty thousand. The eosinophile count is increased. In some cases it was as high as twenty-five per cent.

Joints.—There have been pains in the joints, especially in the sternum.

Skin.—A few hours after the infection, at the site of infection there is redness, then stinging pains and itching. Later the swelling and itching become more intense. In twenty-four hours small pinhead vesicles appear. Itching continues for several days. Later the vesicles become confluent. From the itching and scratching the vesicles break and scales form.

The usual seat of the infection is the soles of the feet where children have stepped on infected soil and the part there most easily affected is between the toes, where the sand is likely to remain long enough for many larvæ to enter.

Deep ulcers do not often occur, though they may appear between the toes. The ground itch usually disappears after a week or more if there is ulceration.

The color of the skin in whites is a pale yellow tinge, sometimes called "Florida complexion." In negroes the skin becomes

grey or ashen in severe anemia. In severe cases the skin is wrinkled and may be edematous, also giving the patient the appearance of being much older than he really is.

There may be edema on the face, feet, legs, or entire body. A common location is over the cheek bones.

The face has a stupid expression. Dark lines appear under the eyes. The mucous membranes may be chalky white. The line of demarcation between the lips and skin may entirely disappear.

Eyes.—There may be present retinal hemorrhages, as in pernicious anemia, pallor of the retina, tortuous vessels often strongly pulsating; asthenopia, paresis of internal or external recti muscles. Diplopia may be present, vertigo nystagmus and hemeralopia. Quoting from Dr. Stiles, "when the patient is directed to stare intently into the observer's eye, after a moment's length, varying according to the degree of the disease, the pupils dilate and remain so even under strong light, and the patient's eyes assume a dull, blank, almost cadaveric stare."

The nervous system.—In the chronic forms the mentality is dull, stupid, and undeveloped or arrested. From the local irritation we find headaches, dizziness very marked, insomnia; nervous temperament, melancholia, hypochondriasis and careless expression. There may be night terrors, neurasthenia, reduced power of mental concentration. Memory is impaired and ambition is weakened. Evidences of psychic degeneration appear. There may be somnolence in very advanced cases so that the patient is able to keep awake in day time with difficulty. Tendency to wish a question repeated.

Liver.—There is no change sufficient to show clinical symptoms.

Spleen.—No change unless a complication of malaria, leukemia, etc., exists.

Respiratory system.—There is marked dyspnea in severe cases. At the time of infection a bronchitis may occur and even symptoms of pneumonia where the larvæ had caused hemorrhage, also inflammation of lung tissue. In experiments on animals the lung was found to be completely consolidated. The lung is many times weakened so that it becomes fertile soil for tuberculous infection.

Circulatory system.—There is a marked dilatation of the heart, also a hemic murmur. The veins pulsate and are so marked in the neck that the pulsation can be seen a number of feet distant. Palpitation is a constant symptom. The pulse is weak and dicrotic, irregular and compressible; in the worst cases it is rapid and

thready, also may be intermittent. The blood pressure is below normal.

Digestive system.—In severe cases the tongue is pale, coated, large and flabby.

There is sore throat at the time of infection. There is epigastric pain in the pit of the stomach. The appetite in severest cases is abnormal, and patients may even eat dirt. In one case the patient ate human hair and another ate some clothing. Dirt-eaters are very common in the south.

The acidity of the stomach is normal. In more intense anemic cases HCl. is lowered. Heartburn and eructations may be troublesome. Gaseous distention of the abdomen is present. Constipation usually is noted in chronic cases,—diarrhea in acute. The fæces contain the ova of the hookworm and blood.

Genito-urinary organs.—Delayed development. The urine contains albumin but is not significant.

If the patient is pregnant dropsy complicates the case. Lactation is impaired.

Abortions and miscarriages are common.

Diagnosis.—The symptoms and the patient's residence are diagnostically important. To be added to these is the examination of the fæcal matter which contains the characteristic eggs of the parasite. No matter how mild the infection the eggs are usually demonstrated. When they are found the diagnosis is positive. The Southern State Boards of Health make this examination free.

The following technic may be followed: The patient is asked to furnish one-half ounce of fresh fecal matter. A small portion of that is taken on the flat end of a toothpick, and smeared on a slide in a drop of water. In hot weather trikresol is better than water. The smear should be uniform and not too thick. No staining or drying is necessary. A cover glass is placed over the smear. Fluid may be added under the cover if necessary or drained off if too much is present. This should be examined under an 8-mm. objective. In heavy infections this will show the eggs, but ten such preparations should be examined before pronouncing result negative.

Another test is for the blood in the stool. Put a little fæcal matter on a piece of blotting paper and leave it to dry for an hour. If hook worms are present the hook worm paper will be stained with blood. There may be eggs of other parasites which may confuse, but they are usually found in the four to eight cell stages in fresh fæces with *no* embryos present.

Diagnosis from the symptoms alone. Given a patient from an infected area with the anemia, dry, pale skin, dilated pupils or with tendency to dilatation, tenderness in the epigastrum, poorly

developed, slow of speech and with a history of ground itch, the diagnosis may be made positively. If a mild case and both the above failed to give a positive diagnosis, then treatment may be instituted and the stools examined for the parasite. It is generally found if present.

Prognosis.—In mild cases the prognosis is very favorable, and in medium cases treatment is usually followed by very good results.

In the very severe cases where the patient is much emaciated and in very bad condition treatment will do some good and may help considerably. At any rate treatment should be carefully given.

Treatment.—Thymol is the chief remedy used and its work is very effective. It must be administered very carefully, however, since it is a toxic substance and the dose is primarily for the parasite and not for the patient. The preparation of the patient is very essential so as not to get absorption.

The night before thymol is to be administered the patient should have a light supper, and at bedtime a good dose of salts should be given. In that way the mucous and food which is covering the invaders more or less would be removed and thymol will get a chance to act on the parasite. The next morning at 6 o'clock one half of the dose of thymol and at 8 o'clock the other half of the dose is given. Instruct the patient to lie on the right side and to remain in that position for a half hour after taking the drug in order to aid gravity in the passage of thymol into the intestines.

Then at 10 A. M. give another large dose of salts. After this dose of salts the patient may take some food, but before that no food should be taken. Fats are to be avoided during the treatment, and castor oil should never be given in place of salts. Thymol, the chemical name of which is isopropylmetakresol, is very slightly soluble in water, readily soluble in alcohol and less so in fats and oils.

When administered it is usually given in the powdered form in 5 gr. capsules. To hasten and get a more thorough action it is mixed with one third to one half its bulk of milk-sugar and in the flat rather than the cylindrical capsules. This avoids the packing of the thymol observed in some cases. In regard to the dose, it is found to be an established fact that since the thymol is toxic, the dose must be regulated by the age and strength of the patient. Also in some instances a large dose divided and given at repeated intervals is less toxic than if given all at once. The total dose is to be always divided into two portions. The following dosage is according to Stiles and is most generally accepted.

Age	Amount in Grains
Under 5 years	$7\frac{1}{2}$
From 5 to 9 years	15
" 10 to 14 "	30
" 15 to 19 "	45
" 20 to 59 "	60
Above 60 years	30 to 45

The treatment is usually repeated once a week till no more parasites are found. The stools should be collected and examined for the parasite after every treatment. The examination may be done under the microscrope and if eggs are still present the treatment is to be continued. The other method is to get the patient to wash the stools through a cheese cloth, keep them moist and take to the physician. The worms are retained on the cloth and may be easily detected.

Some of these patients require treatment, even though they are rid of the parasites, so iron in some form is given to help the blood-forming elements.

Other preparations have been advised and used for uncinariasis, such as beta-napthol, ether, extract of male fern, and eucalyptus and chloroform, but unless these drugs show less toxicity to the host and more potency toward the parasite, thymol will be the remedy mostly used.

This disease must be fought, for it is found to be curable and also very dangerous. Even the slightest cases are a great menace to the community. Therefore they should be treated, no matter how mild the infection.

Prophylaxis.—In regard to the prevention of this disease, we open a very wide subject. It is most prevalent in rural and mining districts. In those parts the people are very ignorant and need to be educated to the ideas of sanitation and hygiene. The disposal of the excreta is a most important problem, for from that lack of proper disposal arises the widespread contamination of the districts. It is found that near and in the cities and in all sewered districts the disease is much less prevalent, and where it is found infection can be traced in patients who have moved into that part from an infected section. The length of time also that sewage has been used affects the percentage of infection. The longer the sewage has been in use the less the infection. (Here it may be said that in examining children in the school for the blind, two children were found to be infected who had been at the institution seven years, and there was no chance for them to have become infected there. They must have brought the infection with

them. So infection may continue for a number of years, and the worms may live a similar length of time.)

It is suggested that night soil be burned, boiled or buried not less than three hundred feet away from and down hill from the water supply. It should not be used as fertilizer unless boiled or fermented first. "Soil pollution should be made a crime punishable by fine or imprisonment."—Dr. Stiles. New and sanitary privies should be used which can be easily handled and the disposal of the excreta managed with no fear of infection.

I may say a few words in regard to the work already done in the south. With the aid of Rockefeller's millions the State Boards of Health and enthusiastic physicians have done much to eradicate the disease.

At the start, the papers made light of the subject and one read of the "lazy sickness." Fun was made of those who were trying hard to get the public interested, till finally the good cause won out, and now we find the press is making appeals and praising the work, that the people may not feel ashamed to come for treatment. We may also say that, at first, the southern people were very much disturbed at the idea of having such a thing and they resented it. But now their coöperation is also secured, so that the work is very successfully growing. The numbers that come for treatment now are in the thousands, while when the work began they were but a few.

The first thing done is to secure the coöperation of each state. Then the disease is located and all the districts infected are sought out and treatment instituted. The state is divided into counties, and each county has a district physician appointed by the State Board of Health. The physicians in that district are told of the work and pamphlets are sent to them for the study of the disease. In that way they receive the coöperation of the local physicians. In most cases the physicians were glad to welcome the campaign, though there have been few exceptions. Many of the southern physicians now make their own examinations and have their own miscroscopes, although the Board of Health does the examination free of charge. The physicians are looking out for the cases, and when the disease is diagnosed treatment is immediately instituted.

District dispensaries are opened for a few weeks in the different parts of the state and thousands of cases are treated. North Carolina seems to have been one of the leading states in carrying on the work. The hospital in Columbus is said to be doing a great deal of work with excellent results.

Besides the dispensaries, lectures are given to the school

children, and booklets are distributed so that the people can realize the importance of getting rid of the plague.

In many districts where the infection is very light the stunted growth of children shows that infection is present and should lead to investigation.

VACCINES AND THEIR PLACE IN MEDICINE.

By Gladys Howard Brownell, Class of 1912, Boston University School of Medicine.

Science tells us that we live immersed in a sea of minute life, that only by these myriads of tiny organisms is life made possible, yet it is kept in continual jeopardy by them as well. There are few diseases not originally caused by them or at sometime aggravated by their presence. The pathology and symptomatology of disease itself are often only manifestations of the conflict between the invading hosts of bacteria on the one hand and body cells on the other, and only by careful study of the participants in the struggle can we become acquainted with the tactics of the enemy, judge the power of the defense and estimate the amount of damage being done.

When pathogenic micro-organisms gain entrance into a fairly non-resisting body in sufficient numbers and of sufficient virulence to cause harm, the toxines engendered by them in their struggle for food and existence start in the body the manufacture of their own antidotes. Antibodies, so called, are thrown off by the cells, and these not only neutralize the poison in the tissues, but also so act upon the bacteria that they may be consumed by the white corpuscles in the blood stream that have been stimulated to take upon themselves a phagocytic action. The average number of bacteria these leucocytes are able to ingest as compared with the number able to be digested by the white corpuscles in a normal individual's blood serum is called the "opsonic index," and is an accurate measure of a person's resistance to an existing infection. When the body has so reacted as to be victorious, the antibodies formed in the blood safeguard that person against this specific infection for a shorter or longer period of time according to the variety of the infection. This immunity or power of resistance may be present only during convalescence, as is always the case, or it may act throughout the life of the individual depending on the infecting micro-organisms.

To aid nature in bringing about body reaction or to control an exuberance of it, can be the only aim of the practice of medicine. To assist nature in nature's own way must be admitted to be the most rational method. In two ways only is this possible,

by vaccine and by serum therapy. To inject into the blood stream of an infected body a specific chemical antidote elaborated in the blood of some animal and capable of neutralizing the offending toxine is, of course, the ideal method of cure. However, this passive immunity can only be of efficient service when all the toxine excreted by the pathogenic micro-organism is thrown into the blood stream. Unfortunately few bacteria secrete only an exogenous toxine. Most varieties possess an endogenous poison as well, then active immunization by the infected individual must be resorted to and vaccines employed.

By the term vaccine we mean "a standardized suspension of killed bacteria in a physiological salt solution preserved in lysol or carbolic acid."

Prophylaxis is the war cry of modern medicine, and here vaccines can produce the seemingly impossible. In armies where the highest mortality comes from the ravages of typhoid fever rather than bullets or cannon balls, immunization against Ehrlich's bacillus has reduced the death rate 70 and 80 per cent. Again it is difficult to find record of a nurse, susceptible to scarlet fever, doing active service in such a ward, contracting the disease after having received an immunizing dose of scarlet fever vaccine. In selected surgical cases, where infection was practically inevitable, under routine treatment an autogenous vaccine made possible in almost every case a first intention healing. Facing these facts alone, — and there are many others, — must we not consider vaccine with hygiene in our struggle for preventive medicine?

In the administration of a vaccine in material doses during a disease process we look for the occurrence of certain definite phenomena. These we divide into two phases, first a negative phase followed by a positive phase. In a few hours after the injection there is noted an increase in all the clinical symptoms, malaise, pain, tenderness, rise of temperature and pulse, an increased discharge or cough if one be present, with a drop in the opsonic index. This lasts from 24 to 48 hours and constitutes the negative phase. The positive phase then follows in which the patient experiences a sense of improvement, the temperature is lowered, and the index raised. This period lasts a shorter or longer time, varying from three to ten days, when a decline follows indicating a repetition of the dose. To get as little negative phase as possible and to so regulate the dose that a continuous positive phase is experienced is ideal, and toward this we should aim. If a dose of vaccine be given followed by a drop in the temperature, rigors, vomiting, this followed by a high temperature, or the

negative phase lasts over forty-eight hours, an excessive dose has been administered.

For therapeutic immunization to be most successful a careful selection of cases must be made. We must have cases whose resistance is not so vitiated that they will not respond to stimulation. Exacerbations in the chronic processes and recurrences after apparent cessations are the rule, and treatment will have to be given intermittently over longer or shorter periods, varying from months to years, according to the person's individual health and the nature and duration of the existing infection. In acute cases the outlook is brighter and the sooner you begin vaccine therapy the shorter will be your case and the more complete your cure.

So far it would seem that localized infections respond better than general infections. Septic hands, pustular acne, erysipelas, tonsilitis, otitis media, especially that following the exenthemata, submit readily to treatment. The brilliant work vaccines have accomplished in typhoid fever, pneumonia and puerperal sepsis must not be overlooked. As an adjuvant to the hygienic treatment of tuberculosis cure can be obtained in a quicker and safer method than ever before. We may reach the secondary as well as the primary infection giving both varieties of vaccines if it seems advisable, one in no way interfering with the other. Whereas formerly we could offer hope of permanent cure only to incipient or very slightly advanced cases, it would seem that with the aid of vaccine therapy more advanced cases, especially those having a fair family history to rely upon, may expect a cure. Statistics also showing that those cases treated with tuberculin show a much fewer number of recurrences than when hygiene alone was employed. Now those bugbears of every general practitioner, dyspepsia, rheumatism and colds. It was noticed after the use of vaccines for other infections a tonic effect was usually exhibited in the digestive system, the appetite was improved and assimilation bettered. Therefore where no organic lesion can be demonstrated as a causative factor of the indigestion, injections of the streptococcus and colon bacillus will often prove beneficial. In infectious arthritis the course is shortened, the period of convalescence with its debility and anæmia is obviated, and there are fewer crippled conditions so frequently the sequellæ of this disease. Heart complications are less common and the danger of their passing into a chronic course is lessened. Chronic or intermittent rhinitis; diseases of the upper air tract designated as colds, are most amenable to this form of treatment. Persistent vertigo may be overcome by a strepto or staphylococcic vaccine. Since the internal ear is the chief organ of equilibration, if it be irritated, equilibrium may be interfered with and vertigo result. Inflammation

of the middle ear is a common malady. It would need little extension of the process to produce a slight but constant source of irritation of this delicate organism, and vertigo result. If this is the cause, vaccines will often remove it. Asthma, entero colitis and cystitis when they have successfully evaded all other means of cure will often succumb to vaccine therapy.

In this mode of treatment, as in all others, the question of the size of the dose and the frequency of its repetition are important factors. The acceptance of tuberculin in minimum doses by the most efficient of both schools, the malicious action of large doses in typhoid as compared with the work that has been accomplished by small doses in this same disease argues very forcibly for the small dose. Then again advocates of the 500 and thousand million bacteria per dose report efficient results in local infections but they give as one of those lamentable but inevitable things the recurrence of those same infections in six months. They would probably experience the cure without the recurrence if they would try less. The belief that every local infection has its origin in a general septicæmia and that large doses of vaccine must be sought to produce so called fixation abscesses seems like getting the cart quite a little distance ahead of the horse.

As to the frequency of the repetition of the dose. Repeat only when a cessation of improvement in the clinical symptoms is noted, or, more accurately, when there is a fall in the opsonic index indicating a decline in the positive phase. On an average this is about four days to a week in sub-acute cases and daily or on alternate days in acute infections.

The question as to whether stock or autogenous vaccines should be used deserves careful consideration. In chronic or subacute cases an autogenous vaccine is best employed. In the very acute, where time is an important factor, the stock vaccine must be used and often appears to do efficient work. The potency of the vaccine depends greatly on its preparation, including the selection of the culture and amount of sterilization.

To class vaccines under some mode of treatment seems to be puzzling. All wish to claim it as their own, but it cannot be logically called antipathic or allopathic to a disease. Is it isopathic or homœopathic? In common with homœopathic remedies vaccines have the following attributes:

1. An affinitive relationship for certain tissues in the body in predominance of the others.

2. In the size of the dose. Large doses aggravate and intensify the existing symptoms, small doses cure.

3. The frequency of repetition. Repeat only when the effect of the previous dose has worn away.

4. Like cures like. The vaccine given is not identical with the bacteria producing the infection, for in the preparation of even an autogenous vaccine the strain of bacteria and virulence is so altered that a similar but not identical condition will be produced by its introduction into a healthy body.

Therefore it is not because of their great store of optimism or unbounded joy in finding a curative agent in their crying need of such that causes homœopathic physicians to report the success in the use of vaccine therapy which they claim to have achieved, but rather because of a fuller understanding of the principles underlying this, a homœopathic mode of treatment, and the laws governing therapeutic immunization.

PROPHYLAXIS: ITS IMPORTANCE.

By Charles L. Henkin, member of Senior Class, Boston University School of Medicine.

Prophylaxis means prevention of disease. Among the earliest medical and ecclesiastical writings are found laws for the sanitary guidance of men. Probably the most familiar of the earlier writings on this subject are the laws of Moses for the guidance of his people. Since practically nothing was then known as to the direct causation of disease, these laws were of necessity empirical, though the measures recommended for preventing the spread of contagion, for cleanliness, for the killing of animals for food, for the isolation of infectious maladies and for the renovation of dwellings where contagious diseases had been, are alone sufficient to warrant the belief that they were formulated from close observation and trustworthy experience. The older writings on hygiene were in the main speculative, representing the dictates of instinct and intuition. That the importance of personal and municipal hygiene was fully appreciated by the earlier civilization, there is abundant evidence. In many instances the advice for baths, water supplies, disposal of sewage and for light and air left little to be desired. With the progress of time, the growth of communities and the demands of modern life, it became evident that the earlier sanitary codes must be recast to meet the requirements of newer conditions. About the middle of the 19th century it was realized that through the application of methods of precision to the study of man and his surroundings, much light could be thrown upon many phases of the problem that had been imperfectly understood. In consequence, through the utilization of chemical, physical, histological, statistical and bacteriological methods, the empirical hygiene of the

past has in part given place to the more exact hygiene of today. The foundation of modern hygiene is laid in the scientific investigations of Von Pettenkofer on ventilation and heating, on the relation of soil moisture to health, on the physical properties of clothing; and in those of Von Pettenkofer associated with Voit on the chemistry of respiration and general nutrition and the chemico-physiological values of food-stuffs, also in the brilliant researches of Koch and his pupils upon the etiological relation of micro-organisms to disease. Today this field has assumed such vast proportions that it is impossible to master in detail its numerous phases. And not only the development of knowledge upon this subject has been very conspicuous, but much light has been thrown upon topics of general medical interest. At the same time one idea which came down almost to our time was that diseases of every kind were a portion of the necessary sufferings of human existence which could be removed, but not avoided or prevented. So hand in hand two schools were formed, each having its enthusiastic followers. Today we reconcile these two schools, we systemize the preventative part of medical science, we bring the preventative part into entire accord with the remedial, and let the world at large understand the inter-relationships which exist between these two parts, and by a sympathy of action, based on knowledge, to enable every man and woman to assist in that which tends towards prevention.

Diseases, on the whole, are divided into general, those affecting the whole organism and, local, those affecting any part of the organism. Diseases are hereditary, acquired or accidental. As to the mode of action, causes are divided into predisposing and exciting. The initial causes of disease, according to Roger, are always to be looked for outside the organism, and accordingly he classifies them into four groups: mechanical, physical, chemical and animate. The last are divided into two groups, parasites and infectious agents. The predisposing causes are age, sex, race, occupation and heredity.

Prophylaxis or measures for prevention of disease are personal when every individual prevents disease in himself or in those who immediately belong to him, municipal or local when the community, city or state is instrumental in prevention, and governmental or central when the federal government is responsible for prevention of disease in the country as a whole, also protecting it from maladies coming from outside of its borders.

Every individual is endowed with a certain amount of natural resistance against factors producing disease. Some have more natural resistance and some have less. The defensive powers of the body lie in the individual cells and tissues of the body, in-

cluding the vital fluids, and it is but natural to suppose that this repellant action to noxious substances is performed best when the cells and tissues are in most perfect health and most vigorous condition. Purity of the external media and environment of the body is essential to its welfare and of its component tissues, and impurity in these media predispose to disease. Each age has its own requirements and that which may be entirely satisfactory or permissible at one time may not be so at another. To attain the best results it will often be necessary even to anticipate with prophylactic measures the birth of the child, and broadly speaking much of the welfare of the future generations lies in the care of those now living. Life has been defined as the power of an organism to adjust continually its internal conditions to its external conditions, and as long as this is done satisfactorily life persists. The secret of personal hygiene and health, then, must lie in determining the relationship between the internal and external conditions of the individual's organism. What is needed is that each one should study carefully the phenomena of his daily life, should determine accurately the purpose and reason of each of the respective functions and then, not forgetting their interdependence upon one another and that all should work in harmony, should endeavor to do that which will best facilitate the functional activity with the least expenditure of energy.

The prevention of transmission of disease by hereditary taint can only be systematically secured by prohibiting the intermarriage of diseased persons. Some claim that this mode of prevention is necessary only for persons of the same kindred. This theory is true and untrue. It is true when it applies to members of the same family, such as cousins, if they have decided taints of disease, for then the taint in the progeny is intensified. Mere consanguinity is not the determining cause of transmission of disease, unless it carries with it constitutional defects. In all cases no sanction should be given to marriage if there are definite indications of constitutional defects on both sides, even though these defects should not be the same on both sides. In all cases, whether the tendency to hereditary taint be great or small,—it is never perhaps actually absent,—special care ought to be taken with women who are about to become mothers. Among the poor we often see women laboring at the hardest tasks, subjected to anxieties and troubles up to the very moment when the labor pains begin. Among the wealthy and well-to-do we see women exposing themselves to fatigue, indulging in pleasures or subjected to trouble and sorrow up to the same period. This is all wrong. We all know that the unborn child is dependent on its mother for its life-blood, and everything that tends to reduce the

vitality of the mother tends also to reduce the vitality of the offspring and to render it more liable to hereditary or transmitted taints of disease. Among the rich and the poor certain simple rules ought to be followed during pregnancy. The diet should be the simplest and should be non-stimulating, alcoholic drinks, tea and coffee strictly avoided. The drink diet should consist of milk, milk and H_2O, cocoa and similar nutritious non-stimulating fluids. Out-door exercise, not producing extreme fatigue, and alternating with rest. Nine hours of sleep is essential. Excitement of mind, emotions and passions should absolutely be avoided. The clothing should be loose, light, warm and the weight carried from the shoulders. Tight lacing and corsets are injurious to mother and child. The mother should also be protected from infectious diseases. During the child's infancy proper attention should be given to baths, dress and feeding. The mother's milk is best, but if this cannot be obtained judicious artificial feeding has to be resorted to. The feedings should be at regular hours. The infant should not be disturbed from its sleep unless for a feeding. Proper attention should be given to the heat, light, and amount of air in the room, etc.

The same rules are applicable to childhood, with the exception of feeding. No alcoholic drinks, tea or coffee should be given to children. The diet should consist of well selected nutritious food, preference being given to vegetable foods and fruits. The mind should be left free to grow with the body, and lessons should be permitted rather than enforced. Ten hours of sleep during childhood, which extends up to fifteen years, should be encouraged. Children should be very carefully taught to carry out all natural habits with regularity and cleanliness. They should also be protected from exposure to the contagious diseases, physical or moral. All the rules applicable to childhood are equally applicable to adolescence, with some modifications.

The first personal rules for preventing diseases from seasonal influences should be based on the following facts:—

1. The body becomes heavier during the summer months, and the gain varies in an increasing ratio.

2. The body becomes lighter during the winter months, and the loss varies in an increasing ratio.

3. The changes from gain to loss and the reverse are abrupt, and take place about the end of March and the beginning of September.

These facts should bear upon food, clothing, bodily and mental exercise, sleep, rest and bathing. The proportions of all foods should increase somewhat in September and be maintained so as to meet waste up to March. Starchy, fatty and nitrogenous foods

are to be increased in quantity so as to sustain the animal warmth. On the other hand, with the turn of March such foods may be decreased in quantity. As September advances additional clothing should be put on and maintained until the season of waste. The clothing should not be of great weight. During the wasting months the bodily exercise should be less severe than in the gaining months. The same holds true as to mental exercise. All through the winter season half as much again sleep is necessary as that wanted in summer. Six hours of sleep in summer are equal to nine in winter.

As to the bath, a good general rule is to have it at an agreeable temperature for the body and keep at that all the year round. I do not think it is necessary to emphasize the importance of sunlight and fresh air in dwelling houses.

As to climate, it can be said that localities which are damp are always bad for human habitations. Such diseases as tuberculosis, rheumatism and, indirectly, heart disease, also pulmonary congestion and some others are especially made more active in damp climates. The best suited climate is one of comparative dryness and warmth. Occasional change from the crowded city or town to the seaside is of great benefit to health. By such change the blood is newly aerated and the lungs get rid of some impurities. According to Richardson, three or four short visits to the seaside during the year are more beneficial than one prolonged visit extending over the same period of time. But the economic conditions sometimes become an obstacle in following out the foregoing rules and consequently cases have to be individualized.

But prevention of contagious diseases require rules which must be equally enforced with the rich and poor. Isolation is one of the most important factors in prophylaxis. As soon as the disease is discovered, confine the patient to one room in the house, hang a sheet over the door, keep it moist with some disinfecting solution. This will prevent the escape of infected dust particles through the doorway. Have all articles sterilized after the patient gets well. The attending physician and nurse ought to wear special gowns and take particular care of themselves. Instruments should be boiled and the excreta disinfected before it is thrown away. The room should be free from all unnecessary articles of furniture. Fresh air should be allowed to circulate freely all the time and the temperature of the room kept at 65 degrees Fahrenheit. It is almost impossible to go into detail here upon all the precautions necessary to be carried out. Isolation of patients into special hospital wards or into special localities assigned for contagious diseases, is the best means of checking epidemics. Modern investigation has shown that the

foundation work of a successful system of isolation comprises: 1. Knowledge of mode and channels through which infective matter is expelled from the body during the course of special groups of infectious and contagious diseases, and, 2, the careful employment of that knowledge in the application of approved means to the destruction of such material as soon as expelled. This brings us to the question of water and milk supply and disposal of sewer.

All suspicious drinking waters should be abandoned and water for domestic uses should be beyond suspicion of pollution. But circumstances may arise where the only available source of suppy of water has become temporarily infected. In such cases the water should be boiled before use, and no process of chemical disinfection can in any way compare with this method from the standpoint of safety and practical utility.

The possibility of milk as a source of danger and a means of transmission of infectious and contagious disease has been adequately proven, hence, not only must there be the greatest care in the handling and keeping of milk until it is consumed, but there must also be frequent and careful inspection of animals from which it comes and their environment. Wherever there is a suspicion or possibility of the milk being contaminated by disease germs, it must be thoroughly sterilized and any change from its normal condition should forbid its use.

The waste from dwellings is of three kinds: house sweepings and the ashes from fires; the waste from kitchens, scraps of food, etc., commonly known as garbage; and sewage, the most important, consisting of the solid and liquid excreta of the body, together with waste water from washtubs, baths, kitchens, laundries, etc.

Ashes alone have little effect upon health, except that they absorb moisture and if allowed to accumulate keep a place damp. If they be mixed with refuse vegetable matter putrefaction is favored and noxious material given off. Kitchen garbage readily decays and if allowed to remain in the vicinity of the house may pollute both the air and soil about it. The kind of waste to which we give the name sewage is, however, of more importance since it is always a possible factor in the production of disease, and since it presents the greatest difficulty in respect to its removal from dwellings and the ultimate disposal of it. It is always advisable to remove sewage from the dwellings before decomposition begins. The pneumatic system of sewer drainage consists of air-tight pipes, which extend from the dwellings to reservoirs and from which the air is periodically exhausted and sewage drawn in; the earth-closet system which consists in taking dry sifted earth

twice the bulk of the dejecta mixed in the closet. This will render the sewage inodorous and inoffensive. The dry earth acts as a deodorizer, nitrifier and oxidizer. But where conditions are favorable the water-carriage system will usually be found the best of all, because it is more nearly automatic and depends least on human interference and efficiency. The necessary apparatus comprises on one hand the house fixtures, pipes and drains, and on the other hand the common or public sewers which receive the sewage from the house drains and convey it to its place of ultimate disposal.

As a rule the human system has the power of accommodating itself, through habit, to influences which in one unaccustomed to them would soon produce serious results. But in spite of this, if the body be exposed for any considerable length of time to conditions of impurity or deterioration in its supply of air, water or food, such conditions will always tend to undermine health and increase the susceptibility to disease.

The difference between susceptibility and immunity is that immunity is that state of the organism in which it resists the invasion of disease-producing bacteria or resists their growth and activity after they have gained an entrance, while susceptibility is the opposite condition, in which instead of resistance there is a passive inertia which allows the disease-producing bacteria to develop. Immunity is either natural or acquired. Natural immunity, as I have said before, is the vital, reactive state of a healthy organism against the invasion of foreign agents. This immunity varies to some extent in different races, families and individuals. It can also be destroyed through external agencies, as change in nature and quantity of food supply, change of mode of living, undue exposure, change from outdoor to indoor occupations, close confinement, lack of sunshine and fresh air, as well as many other changes in the environment which tend to lower the general vitality of the system.

Acquired immunity may be divided into four classes:—

1. That induced by recovery from a previous attack of disease, as in some of the diseases of childhood as scarlatina, measles, varicella.

2. That induced by an attack of an allied disease, as the immunity conferred by vaccination against variola.

3. That induced by the injection of antitoxic substances, as in diphtheria.

4. That induced by the injection of toxins, as in the protection against typhoid fever and plague by means of dead cultures of the specific organisms of these diseases. It has been demonstrated over and over again in epidemics of diphtheria that the

injection of small doses of antitoxin into children exposed to infection serves to break up the epidemic. The antistreptococcic serum has been successfully employed in the treatment of erysipelas. The anti-typhoid serum has been with a certain success employed to immunize people against typhoid fever. This has been extensively used in the United States Army and, as the reports say, with good success. Nurses have been immunized against contagious diseases before going to the contagious wards, and a lesser number of them were infected. Antistrepto- and staphylococcic serum has been used to immunize patients against infection before abdominal operations, and the results justified the action in certain cases. For the last I can vouch myself. The prophylactic treatment of cattle with anthrax vaccine, vaccination of cattle against tuberculosis, the prophylactic treatment of cattle with black leg virus and other animal diseases which are prevented by antitoxin, the value of vaccination against smallpox in the human family,—all these lead us to hope that specific prophylactic agents will be discovered to combat outbreaks of infectious diseases.

For the prevention of all the parasitical causes of disease there is one method which is as effective as it is simple, and that is to be clean; for the diseases induced by parasitic growths of all kinds, with one or two exceptions, are due to lack of cleanliness. For the prevention of those diseases from parasites which enter the body by the alimentary canal and which give origin to hydatids, tape-worm and trichinosis, cleanliness in respect to food is the desired method. For the prevention of diseases like scabies, from those which affect the surface of the body, systematic, general ablution is the means required. For prevention of cutaneous diseases from vegetable parasites like ringworm and scala, head protection from contagious influence, conservation of the general health by correct diet and mode of life, are, in addition to cleanliness, the measures demanded.

Quarantine may be described as the methods and the measures imposed by a government,—local, state or national,—to prevent the introduction of infectious diseases into the country or from one locality to another. While all civilized nations have from the earliest times recognized the importance of separating those afflicted with epidemic disease from the well, the development of the idea and the practice of quarantine have necessarily been consequent upon the growth of commerce, and while there had practically always been isolation for leprosy, the first quarantine enactment, in our meaning of the term, was put in force in Venice about the beginning of the 15th century as a barrier to both the black and Egyptian plague. With the knowl-

edge gained regarding the nature and causes of infectious diseases, their periods of incubation, etc., it is at once evident that it will be neither necessary nor wise to fix upon a prolonged and arbitrary time during which vessels or passengers must be detained in quarantine. The present quarantine laws of the United States, and the latest regulations of the Treasury Department based upon them, are especially designed to afford the greatest possible protection to the country against the importation of disease with the least possible detention of incoming vessels and passengers. An important innovation which facilitates both these ends has been the establishment of quarantine in foreign lands, as it were: the inspection and, if necessary, disinfection by officers of this Government of all vessels, passengers and cargoes leaving a foreign port for any port of the United States; and in addition there is that section of the law which provides that the President may, whenever the condition of affairs shall seem to warrant it, prohibit in whole or in part, the introduction of persons and property from such countries or places as he shall designate and for such period of time as he shall deem necessary. Every vessel clearing from a foreign port for this country must obtain from the United States consular officer of the port or from the medical officer appointed for the purpose a bill of health setting forth the sanitary history and condition of said vessel and certifying that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary conditions of the said vessel, its cargo, passengers and crew. The vessel must be clean in all parts before taking on either passengers or crew, and all parts liable to infection must be disinfected if any infectious disease has occurred on the last voyage. Even the bedding provided for steerage passengers must be destroyed or disinfected before being used again.

At ports where cholera prevails in epidemic form, special care should be taken to prevent the water and food supply from being infected. The drinking water and food should be protected against contamination by flies, etc. Where yellow fever prevails, precautions should be taken to prevent the introduction of mosquitos on board the vessel. At ports or places where plague prevails, every precaution must be taken to prevent the vessel becoming infected through the agency of rats, ants, flies, fleas or other creatures. At all infected ports or places, communication between the vessel and shore should be reduced to a minimum. The regulations also indicate what kind of cargo, coming from or through infected districts, may or may not be shipped, and what kinds must invariably be disinfected under any circumstances. As to the passengers, while they are divided into two classes, cabin and

steerage, no person suffering from cholera, smallpox, yellow or typhoid fever, scarlet fever, measles or diphtheria is allowed to ship, nor should passengers ship from an infected port. Steerage passengers and crew who have been exposed to smallpox must be vaccinated before shipping unless they can show proof of immunity by former attack or satisfactory vaccination. If steerage passengers or crew have been exposed to any infectious disease they may not embark until the incubation period is over. This period begins only after the bathing of the passengers, disinfection of all their baggage and apparel, removal of all food brought with them, and isolation from others not so treated. Cabin passengers from cholera or other infected ports or districts have to produce satisfactory evidence as to their place of abode for the five days immediately preceding embarkation, and if there be any reason for the belief that any one passenger or his baggage has been infected such passenger is to be detained as long as the inspecting officer may deem wise, and the baggage is to be disinfected.

It is evident that if these regulations at foreign ports together with those required at sea, that is, cleanliness and free ventilation of the vessel, daily inspection by the ship's physician, isolation and disinfection of the sick, etc., be properly observed there can be but little chance of the germs of quarantinable disease gaining entrance to our country, and since the duration of the voyage will in most cases exceed the period of incubation of most of the contagious diseases if more of these manifest themselves on shipboard at sea there will be no need for any detention at the port of entry beyond that which the inspecting officer stationed there requires for the performance of his duties, that is, to inspect the vessel, bill of health, crew and passengers and their lists and manifests, the ship's physician's clinical record of all cases treated and, when necessary, the ship's log.

The inland quarantine serves to prevent an epidemic from extending from one locality or district to another. It defines certain boundaries beyond which no person or thing capable of carrying infection may pass, and establishes certain points of ingress or egress on these boundaries where there may be the necessary detention, inspection, disinfection, etc. The sanitary cordon consists of a line of guards, military or civil, thrown around a district or locality either to protect the same from the surrounding country when infected or to protect the surrounding country from the infected district or locality. It is not intended to bottle up all the people who are caught within an infected district, but, on the contrary, it is intended as a means of exit to those who will not carry with them contagious disease

to people beyond. The sanitary cordon may be single or double. In the latter case the inner line closely encircles the well defined infected locality, and the outer line the whole suspected territory. No unauthorized person may pass through the cordon. Camps of probation or detention must be established where all persons coming from the infected locality are kept under observation for a time equal to the period of incubation of the disease in question.

In 1878, Surgeon General Woodward suggested the establishment of camps of refuge, which are simple residence camps established to receive the population of an infected community when it has been determined to depopulate the infected district.

Sometimes it is necessary to establish a railroad quarantine which is carried out on the same plan of disinfection, detention, and isolation of all suspected freight, baggage and passengers if coming from an infected locality. There may also be local or house quarantines established by the municipal boards of health to prevent not only the family or attendants of the sick from mingling with the rest of the community, but also keep outsiders from spreading the infection through unwise visitation. Though such measures as described above may appear at times a hardship to certain individuals, one should not forget the great cost to all concerned of epidemics once inaugurated, nor that it is by such stringent measures that we shall be able to eradicate the infectious maladies from our community.

The value of vaccination as a prophylaxis against smallpox has many opponents. But all the arguments as well as statistical data seem to be more in favor than against it, and yet legal compulsion is necessary to secure its general employment. There are disorders to which all children are subject, whether in school or out, but a special class are markedly influenced by school life or work and to these abnormal conditions the term school pathology may be given. Overwork, coupled with depressed vitality may give rise in children to one or more of the following troubles: dyspepsia, headaches, nervous derangements, chorea, epilepsy, neurasthenia, backache, menstrual disorders, and, in some cases, tuberculosis. Also faulty arrangements of seats and desks, improper location of windows, blackboards, etc., may cause spinal and other physical deformities, defective eyesight, etc. Young children should not be kept in school for too many hours in the day. Edwin Chadwick has shown that a child from five to seven years can only attend to one object for about fifteen minutes; from seven to ten years for twenty minutes, from ten to twelve for twenty-five minutes, etc., and that the length of individual lessons and likewise the total day's work should be arranged accordingly.

To prevent the troubles enumerated above, strict attention

must be paid to the child's natural habits, time and quality of meals, to the ventilation and amount of air per child in the class-room, to the construction of tables and chairs, to the amount of recreation, etc.

Diseases which are induced by the absorption of inorganic poisons through the skin or mucous membranes, can only be prevented by extreme personal cleanliness and perfect ventilation of the working rooms and by taking care that the injurious substance, whether arsenic, lead, potassium bichromate or copper, does not remain in contact with the absorbing surface. If possible gloves should be worn, and the mouth and nostrils covered with gauze or anything else that will permit the air to pass through filtrated.

The rules for the prevention of senile disease are all personal. It should be a rule among grown up people never to subject children to mental shock or unnecessary grief. To avoid premature old age in mature life we must remember that grief anticipates age. Dwelling on the past, forming hypotheses as to what might have been if this or that had or had not taken place will do more harm to health than many things connected with the real calamity. Occupation and some recreation are the best preventatives for mental shock.

Hate anticipates age. It keeps the heart always at full tension, oppresses the brain and senses, robs the stomach of nervous power, thus injuring digestion, and the failure of life begins at once.

Jealousy anticipates age. Jealous men are unhappy, broken-hearted and live short lives. The prevention for it is diversion of mind towards useful and unselfish work.

Unchastity anticipates age. Departure from chastity leads to specific and hereditary disease and also serves as cause for organic degeneration and premature old age. Chastity, then, is a preventative against senile decay.

Intemperance anticipates age. The more the social causes of mental and physical organic diseases are investigated, the more closely the origin of degenerative organic changes are questioned, the more clearly it is shown that intemperance is the root of tremendous evil. Hence temperance is preventive of decay.

When old age has really commenced the chief measures for sustaining life and delaying its final decay with the least friction and the least waste are: Use light but nutritious diet, varying it according to season. Take food in moderate quantities four times a day, including a light meal before going to bed, clothe warmly but lightly, so that the body may at all seasons maintain its equal temperature. Keep the body fairly well exercised and the mind ac-

tive and cheerful. Maintain an interest in what is going on in the world and take part in reasonable labors and pleasures as though old age were not present. Take plenty of sleep during sleeping hours. Stay nine hours in bed at the least and take care during cold weather that the temperature of the bedroom is maintained at 60 degrees Fahrenheit.

Avoid passions, excitement and luxury.

DIET IN GLYCOSURIA.

By Everett W. Coates, member of Senior Class of Boston University School of Medicine.

Although glycosuria was first definitely recognized by Willis about 200 years ago, the major symptoms of the disease were doubtless observed and recorded on papyrus which antedates Moses. Ever since their recognition, methods of treatment have been instituted to alleviate these conditions, but not until within the last 100 years have definite systematic measures been pursued, and methods which have produced most marked results are confined practically within our own time.

The first and simplest methods used in modern times were the mere obliteration of sweets or sugar from the diet. This may, in some cases, be practiced at the present time with beneficial results, but it will, I think, be seen in the following paper why this is not always correct, and why in some cases it is deleterious to the patient's best interest.

Although glycosuria has been known and recognized for so long, there is still much that is not known about the disease, especially regarding its etiology, metabolism, pathology and, to some extent, its treatment. From the pathological standpoint we do know that certain lesions in the brain, liver, pancreas, appendix and abnormal metabolism cause glycosuria. We also know that while in all cases of diabetes mellitus there is sugar or glucose in the urine, still all cases of glycosuria are not diabetes mellitus. There is so much variety as regards the cases, conditions, symptoms and treatment that I think it is best, before trying to speak of treatment, to give just a brief outline of the definite varieties, and this will make the treatment more clearly understood. I am indebted for this outline to Dr. Stephen H. Blodgett, whose valuable research work in this line is now recognized by a majority of the profession.

Form A.

In this form of glycosuria the original seat of the trouble is in the fourth ventricle. These cases are comparatively rare and

usually discovered only through the routine examination of the urine. Under this class should be placed glycosurias following cerebral hemorrhage, concussion of the brain, pressure from new growths or tumors, cerebral edema, and in fact, any process causing injury to or pressure on the fourth ventricle. The urine is usually normal or decreased in amount, apt to be pale and not very high specific gravity, usually some albumen, and sugar, varying from 10 to 75 gms. in 24 hours; usually a little acetone at times, but no diacetic acid. No history of largely increased amount of urine can be gained, and physical examination of liver and pancreas is negative.

Form B.

This is the most common form, and the seat of the improper metabolism which causes glucose to appear in the urine in this form is in the liver. It can be divided into two broad forms, depending on how much some of the other processes of the liver are interfered with. It is much more likely to affect the well-to-do, rarely occurring in persons of the laboring class or in children.

Sub-Division 1.

This form is usually seen in persons between 30 and 60 years of age. They are usually stout, very fond of their food and disposed to be what are called "high livers," leading a more or less sedentary life. The urine is apt to be increased in amount, though rarely running over 3000 c. c. in 24 hours, with a specific gravity running from 1028-1040 and sugar varying from 50-200 gms. There may be a very slight trace of albumen, and almost always you will find a very large number of large sized uric acid crystals, and frequently calcic oxalate crystals in the sediment together with a few hyaline casts. The color is normal, and usually there is a strong acid reaction. Acetone rarely ever shows and if so only in the slightest possible trace. Diacetic acid is never present in the uncomplicated cases. This type occurs more frequently in men than in women.

2. This class has patients usually of ordinary build between 50 and 70 years of age and usually no uric acid in sediment. There may be any of the following symptoms: gangrene of the toes, itching of the labia, boils, carbuncles and frequently a very painful neuritis, otherwise the symptoms are the same as in 1.

Form C.

This form is due to an acute process in the pancreas where a kind of disorganization takes place. It may occur at any age but is more frequently seen in children and adults of the laboring

class. The most marked symptom is intense thirst and the patient can usually tell you on just what night this began. The urine varies from 2000-15000 c. c. daily with a high specific gravity 1028-1042, and sugar from 75- even 800 or 900 gms. Acetone and diacetic acid are almost always present and usually in large amounts. Next to intense thirst you get dryness of the mouth, markedly increased appetite and great loss of strength and weight. In most of these cases there is usually a spot of increased tenderness on deep pressure over the pancreas.

Form D.

This is a chronic form C. The change in the pancreas, however, goes on more slowly and to a less advanced degree than in that form. It comes on very insidiously, and among the first symptoms noticed are increased urine or great lassitude. The thirst comes on more gradually and is less intense than in form C. There is dryness in the mouth and gradual loss in strength. It may occur at any age but more frequently between 25 and 50 years of age, being but rarely found in children. The patients are almost always from the laboring class. There is a large quantity of urine with a high specific gravity and sugar varying from 100-800 gms. daily with acetone and diacetic acid usually present, especially if the disease is of long duration before you see it. Sometimes the combination of forms B and D exist together, but this probably started as B and progressed to D. This is rather rare and the treatment is the same as form D.

Temporary Glycosurias.

Under this head are classified the glycosurias which are, as their name implies, temporary or transitory. In my laboratory work I have not infrequently found cases which give reduction to the Haines test with from 5-25 drops of urine, but which have an apparently normal specific gravity. On inquiring into these cases I have been surprised to find the patients of all ages from children of six years to adults of forty-five with no history of glycosuria, but in the hospital for an appendix operation. These cases usually show from 10-30 gms. of sugar in 24 hours. In two or three days after the operation (the urine being examined carefully daily) the sugar had entirely disappeared and did not return during their stay there. Many of these cases have been examined periodically for some time after their leaving the hospital and no signs of sugar have been found.

Certain drugs will also cause a condition of this kind, as phlorídzin. This drug acts on the renal epithelium and causes an elimination of the sugar regardless of diet, carbohydrates or not. This

form is called renal diabetes by some writers, but will stop when the effects of the drug have worn off.

The alimentary glycosurias which follow the ingestion of large amounts of sweets or of carbohydrates are to be classed under form B. for without doubt, if allowed to continue, they will, in time, lead to well defined cases.

Pregnancy.

As to the causes of glycosuria in these cases there is still some doubt. VanNoordin claims, "a special weakness of carbohydrate metabolism does not exist in pregnant women." We do know that about the time of lactation if routine analyses have been made throughout the pregnancy, sugar is apt to appear now when it was previously absent. This is beyond a doubt due to the presence of lactose in the urine. But how about the non-glycosuric women who have become pregnant and show from 25-100 gms. of sugar in the fourth month? The theory of Blodgett in these cases seems to me to be very reasonable. We know that the pancreas is disturbed in pregnancy as evidenced by the morning sickness and acetone. Then why not an acute disturbance of the pancreas which causes sugar to show until labor or very shortly ater? In the other cases of pregnancies where glycosuria existed prior to pregnancy the treatment will be found later on.

Treatment.

It is impossible to outline in such a short paper as this the treatment of cases completely. My idea is only to mention the most important facts to be considered with some general methods of treatment.

Form A.

In these cases as the glycosuria is really secondary to some other cause, as an apoplectic shock, cerebral hemorrhage, or an otitis media, the main treatment is to remove the condition and the sugar will clear up. In these cases while it might be all right to remove the crude sugars, still if the patient's condition is such that he will live, the glycosuria will clear up even if the sugar is given in the diet. The prognosis in these cases depends entirely on the surgical prognosis.

CASE OF FORM A.

Glycosuria following Cerebral Hemorrhage.

Day of disease in M. H. H.	Acetone	Diacetic	Sugar grams.
1	Absent	Absent	Present in small quantity
6	"	"	9 gms.

This was a case of paralysis following a cerebral hemorrhage.

It was only with the greatest possible trouble that a 24-hour amount of urine was obtained and this could not be done more than once. The diet was not changed in this case because of the sugar and as the patient left the hospital in a few days I was unable to follow it up.

The amount of sugar may persist until the death of the patient (if the hemorrhage is severe) or it may diminish and eventually disappear in a favorable case.

Form B.

The two classes under form B. I shall treat together for sake of time. Treatment, of course, depends on many things, as physical condition, age of the patient, duration of the condition, rich or poor, must patient work daily or can he rest, and if the condition of gangrene is present or not. Any surgical cases occurring during diabetes mellitus must be, as a usual thing, treated surgically locally if the condition of the patient permits. In most cases it is necessary to resort to dietetic measures first, however. When a case of this sort comes in to you, let him eat what he has been accustomed to until you have made two or three analyses to see what his daily excretion of sugar averages. It is then not a bad plan, provided acetone and diacetic acid are not present (in the usual case they are not), to put the patient on a milk and eggs diet if the amount of sugar is small, or, if rather high, eliminate crude sugars and some of the more important carbohydrates from the diet. Make analyses daily during this time. Every time you make a reduction in the diet keep on same for from 3 to 5 days, depending on the case, to see just what the elimination is.

You may have a comparatively young person who naturally is more or less active and with some aim in life who, in a great many cases, must be kept on a strict diet all the rest of his or her life, but that diet must be of the kind which will furnish sufficient number of heat calories to keep up good bodily vigor so patient can do his work, and lastly to be of sufficient variety so as to keep him contented in mind. If the diet is so strict and of such limited variety that after a period of six months the patient kicks over the traces, eats anything he wants and leaves you, preferring to live six months and enjoy life to living six years on a restricted diet of that sort, and if perchance he is wise enough to consult another physician he is just two steps further down the scale than when he left your restricted diet.

The diet in these cases may consist of milk, buttermilk or

water (ad. lib.), eggs, fish, meat, including chicken, green vegetables, as celery, lettuce, spinach, cucumbers, etc., oranges, grapefruit, vegetables or fruits, in fact, of any kind except beets, carrots, potatoes or bananas. This is the main diet. This, of course, may be added to or subtracted from, depending on the case, the kidney or heart involvement and the sugar elimination of the patient.

Another thing which must be considered, depending on the financial resources of the patient, and that is how elaborate can the diet be made. If a person is well-off and can buy expensive foods and luxuries he can have almost anything at any season, while the dietary of the poor man must be so arranged that he will still get sufficient nourishment and vigor from his food, but the cost will be within his means. A strict weight of the patient should be kept all this time (taking it twice weekly being the best). Bathing and brisk rubs with a soft Turkish towel bi-weekly are to be recommended also.

We are apt to think of food when we speak of diet, but in these cases the diet of exercise and mental labor plays no small part in the metabolism of the patient. In some cases if the patient is relaxed and not compelled to work for a week and then follows a day or two of severe mental and physical labor for a period of four or five hours each day even if the diet is the same during this period, a difference in the sugar content may be seen on the next two or three analyses. As acetone (and rarely diacetic acid) shows up in these cases occasionally, it is best to say a word about it.

When acetone begins to show up it is either in the last stages of the disease previous to coma, or else it is due to a too restricted diet. In the latter cases adding some carbohydrates to the diet will usually relieve the acidosis. In the former sodium bicarbonate is indicated. In these cases you sometimes get patients who complain of a constant burning in the stomach and dryness of the mouth. They do in many cases want something acid to drink, but after drinking it they feel worse. The administration of sodium bicarbonate, together with proper attention to the diet, will relieve the condition.

The question of reducing the diet in these cases to such an extent as is discussed by some authors, of giving lactose free milk, and things along that line, need not be discussed here. A point which will perhaps be of value and which goes to show why *any one particular diet* is *not* good in *all* cases is as follows:

Two patients are excreting 50-100 gms. of sugar daily on a diet which includes 8 oz. of potato and 4 oz. of white bread re-

spectively, all the rest of their diets being the same. They exchange diets and soon the one who is on the bread goes up to 125 gms. while the one on the potato remains the same or only goes up 5 or 10 gms. It is a well known fact that what will agree with and not affect the sugar content of one person, will, on the other hand, cause another person's excretion to run up considerably. This is the one great reason why a diet of plain potato, arrowroot starch, or oatmeal is not good for all cases because certain cases are benefited by the use of them.

If you are fortunate enough in any of your cases to cause the sugar to disappear on the diet and it remains absent for three or four days, then increase your diet allowing the patient to have this or that for a week, all the while watching the sugar excretion. If sugar shows up in small quantities put him back again on the first diet with slight changes for a week, and after changing in this manner for two or three times you will soon be able to judge just what your patient can do. In many cases of this sort you will be able to regulate the diet with some slight restrictions so that you will eliminate sugar from the urine (as tested for ordinarily) and the patient will never miss the forbidden food. In other cases you will find that after trying the above method for three or four times the patient still excretes some sugar, even on a restricted diet, and is losing some weight in addition to being dissatisfied with the diet. It is this class of patients which you must deal with intelligently and reasonably.

Usually it is necessary to explain to them that they will always have this condition; still, by putting them on a certain restricted diet (as regards only crude sugar and the like) you can keep them in good health and able to work every day with a daily excretion of sugar of say from 20 to 100 gms. or whatever you find the normal to be in the case at hand. Say further that it is better for them to have this daily excretion of sugar than to be put on such a strict diet that no sugar is passed, for on a diet of this kind they will, in three months prefer death to remaining on such a strict diet for any longer period. In this way you keep the patient's hopes up, enable him to work, and he is contented with his diet and a great many times he will live for years, dying from some other cause than diabetes.

Many times when you eliminate sugar from the diet to satisfy the patient's longing for the same, saccharine may be substituted. As this is many times sweeter than sugar (550) very small quantities must be used. This can be used in cooking as custards, etc., or used in sweetening coffee, cream, etc.

CASE OF FORM B.

Glycosuria.

Day of disease in M. H. H.	Acetone	Diacetic	Sugar grams.	Diet
1	Yes	Yes	Present	As at home
2	"	"	57	Light half diet
6	"	No	74	
9	No	"	91	Diet increased (began today)
12	"	"	42	Milk and eggs diet started the 19th day
22	"	"	20	
25	"	"	14	Diet increased today
26	"	"	10	
29	"	"	44	Milk and eggs on 28th day again
32	"	"	6	
34	"	"	15	Patient discharged with her diet

This patient was a stout Jewish woman of about 50 years of age. Diabetes of about three years duration. Came to M. H. H. suffering from periods of intense burning and vomiting, following a dietary indiscretion. An intense neuritis also existed in shoulders and feet. The acetone and diacetic acid disappeared under the use of sodium bicarbonate. The results of correcting the diet can be seen. The patient's normal excretion (daily) on proper diet will be about 15-25 gms.

Prognosis. This condition may go on for years with proper diet and the patient enjoy pretty good health.

Form C.

In these cases usually they are so far advanced that they do not respond materially to any restricted diet. The only method to pursue is to cut out crude sugars and abundance of carbohydrates and give them anything they desire to eat, making them comfortable for what short time they are to be around here. If they are put on too restricted a diet they are much more apt to go into a comatose condition early. If when on a fairly restricted diet it is noticed that the acetone and diacetic acid are increasing, it is best to give them sodium bicarbonate in rather material doses. As great weakness and prostration usually accompany this form, absence of exercise with rest in open air, giving them all the liquids they desire to palliate the excessive thirst, are the best measures to pursue. Late in the disease coma usually develops, from which death relieves. Very rarely it is possible to get cases

of this class early in the disease (one or two weeks after the first symptoms appear) and then there is a possibility of effecting a cure.

CASE OF FORM C.

Glycosuria.

Day of disease in M. H. H.	Acetone	Diacetic	Sugar	Diet
1			Present	Same as at home
2	Yes	Yes	292	Anything she desires except crude sugar
3	"	"	419	
4	"	"	465	
5	"	"	574	
6	"	"	427	

Patient. Miss H. W., aged 16 years. Duration of illness one year. Rapid loss of weight and strength, intense thirst, with voracious appetite. Craved sweet things. Large daily excretion of urine (200-250 oz.). The patient showed marked emaciation. Very sore on deep pressure over pancreas.

The daily excretion in this case will vary from day to day until just preceding death, when there will be a drop in both quantity of urine passed and number of grams of sugar excreted. Coma and death will follow.

Prognosis: Fatal.

Form D.

The treatment of these cases has to be undertaken with the greatest care. A too liberal diet allows the disease to progress more rapidly, while a too restricted one causes a fatal termination by inducing coma.

The diet must be regulated, depending on the amount of sugar present, increase in acetone or diacetic acid and loss of weight of the individual. In these cases all food should be weighed before being given to the patient, and daily analyses should be carefully made. No regulation diet can be given for this class, for what will do for one case may possibly induce coma in another case. Exercise must be restricted so that the patient may not tire himself. Deep breathing exercises and some mental work are not contra-indicated. These cases are usually not of long duration.

CASE OF FORM D.

Glycosuria.

Day of disease in M. H. H.	Acetone	Diacetic	Sugar gms.	Diet
1	Yes	Yes	Present	Same as at home
2	"	"	291	Restricted diet (not milk and eggs alone, however)
4	"	"	261	
7	"	"	183	
8	"	"	138	
11	"	"	118	
15	"	"	139	
16	"	"	151	
18	"	"	125	
22	"	"	184	In along here patient received something of carbohydrate nature from one of the other patients
25	"	"	190	
28	"	"	223	
30	"	"	153	

Patient. Mr. X. Y., aged 50. Duration of illness about 15 months. Was on restricted diet previous to entering M. H. H. Chief symptoms great loss of weight and strength, intense thirst with increased appetite, neuritis, gastric disturbances and tenderness over pancreas.

On a rather restricted diet his daily excretion of sugar came down somewhat. The daily administration of material doses of sodium bicarbonate did not, however, reduce the acidosis markedly. As palliation was the only thing to be looked for in this case, things progressed very well until about the 23rd or 24th day. On account of the intense desire for sweets it not infrequently happens that patients will smuggle something of such a nature into their room, and this patient was no exception as seen by the analysis for the few days following. The patient left the hospital at the end of a month to go home, having a proper diet prescribed for him. I followed this case after he left the M. H. H. and he showed the usual course of such cases, gradually going down hill until coma ensued, resulting in death.

Temporary Glycosurias.

The most frequent causes under this head are perhaps appendicitis and ingestion of too much carbohydrates. As regards the first, it is only a temporary condition which shows up, covering a period of perhaps three or four days or until the case comes to operation. The ingestion of sweets affects them in no way.

In several cases I watched at the Mass. Homœopathic Hospital. I have been unable to find any sugar after operation, and as soon as the patients could stand it they were put on a full diet without any sugar showing up. When a glycosuria is due to temporary ingestion of too much carbohydrate it ought strictly speaking to come under one of the forms previously mentioned, as it is a case of abnormal functioning.

Pregnancy.

In these cases it is important to find out whether it is a temporary glycosuria occurring in the pregnancy or perhaps existed before the pregnancy. If it occurs near the end it is doubtless due to the presence of lactose and will clear up after the delivery. If considerable quantity is found and no previous history is obtainable it is best to put the patient on a diet which will meet the demands of the case until after delivery, when the condition will clear up.

In cases where diabetics become pregnant it is necessary to put them on a diet, but even in these we know that diabetics are very susceptible to infection and it is a question, not to be answered here, whether it is wise to let the pregnancy continue.

To briefly summarize, we may draw the following conclusions:

1. That by first classifying the case you get an idea of what diet to give.
2. That it is absolutely impossible to expect to eliminate the carbohydrates from dietaries of all glycosuric patients.
3. That certain glycosurias will disappear of their own accord regardless of diet.
4. That it is impossible for obvious reasons to give all classes of glycosuric patients an absolute diet of any one thing, simply because certain cases have been benefited by them.
5. That the environment, work, exercise and rest of patients in these conditions play no small part.
6. That the limited use of saccharin in sweetening satisfies the patient's desires without apparent deleterious results therefrom.

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M.D.

Case IV.—c. Diagnosis: Septic Pneumonia.

This was the clinical diagnosis. The extreme debility of the patient invited infection and prevented active vital resistance to it. The pharyngitis which he had would have proved merely an annoying incident to one who possessed normal resistance, but to him it was the beginning of the end.

Starting with a neuropathic tendency which disregarded the danger signals in pursuit of sensual gratification, and left with the where-with-all to indulge his desires, he early formed habits which drove him steadily against the rocks until his frail bark could no longer stand the buffeting, and sank water-logged.

A sermon might well be preached upon the importance of early environment and the development of self control in neuropathic children, with this case as a text.

Dr. W. H. Watters kindly allows me to print his gross autopsy finding as follows:

Pathological Diagnosis—Acute septicæmia, secondary pneumonia, acute vegetative endocarditis.

The body is that of a man apparently about fifty years of age, somewhat emaciated but moderately developed. Rigor mortis and post-mortem lividity slight. In the right cervical region is a surgical incision extending downward along the anterior border of the sterno-mastoid muscle. This is closed with sutures, and from the lower angle project two rubber drainage tubes.

Abdomen not distended, or tympanitic. Cavity shows no evidence of abnormality. Peritoneum smooth and lustrous throughout. No adhesions and no effusion. Diaphragm reaches the fourth space on the right side and the fifth space on the left. Examination of the abdominal viscera shows no marked abnormality other than a slight irregularity and firmness of the liver.

In the right *pleural cavity,* posterior, is a small amount (5 c. c. estimated) of thick, yellow, creamy fluid, apparently pus. Upon the posterior part of the pleural surface is a considerable amount of fibrous exudate, yellowish-white in appearance. The pleura in this vicinity is deeply injected. Further examination shows no abnormality.

Pericardial Cavity—Cavity contains 2 to 3 c. c. of clear serous fluid.

Heart—270 grams. On the edges of the mitral and of the aortic valves are extremely minute fibrous excrescences, soft in

character and but loosely connected with the edge of the valve. The endocardium is slightly blood-stained. Right coronary artery shows slight obstruction by an area yellowish-white in color, apparently atheroma.

Weight of right *lung* 790 grams; left, 721 grams. In the posterior parts of both lungs are irregular areas of nearly complete consolidation. These float heavily in water and contain an abundance of dark red blood. The remaining parts of the lungs are much distended, the anterior borders and surfaces being hyperdistended in the form of emphysema. Apices negative.

Bacteriological Examination—Cultures from the heart, lungs, and from the pus in the right pleura, all show pneumococci in abundance.

Case V—c. For Diagnosis:

F. T. P., age 42 years, mechanic, born in Massachusetts of American parents. A man of medium height and weight, thin but muscular, with sallow, tawny complexion, black hair and rather fierce eyes.

Family History—Father died of apoplexy at 65; was a quiet, home loving, business man. The mother is living, and is of nervous and capricious temperament. There were seven children, of whom two died in infancy.

The patient was a healthy (?) but nervous and irritable child, always in trouble. He was expelled from both public and private schools. Masturbated some and early developed an active sexual life. "Married a woman who was not true to him, so he did likewise." Says that as a boy he had much abdominal pain. From 18 to 30 years of age drank for sociability. When 17 years old (1887), was in the Bussey Bridge railroad accident. His head was severely bruised and he lay under the wreckage three or four hours with two dead bodies on top of him. He remembers waking up and spitting out what he thought at the time were his teeth, but now knows it was tobacco. He has talked the accident over in detail and has no bitter feelings about it. He received good damages.

In 1888 he went to New Mexico, Texas and Arizona and led a wild life. "Had a chance to look down the muzzle of a gun in a saloon twice." Lived in Boston then until 1893, when he again went West and kept store. This venture failed as have all his others, and he returned home. Got a divorce and shortly after married again. There were no children by first wife, but two healthy ones by second.

Present illness—Three years ago, while working as a carpenter, he fell unconscious and awoke a half hour later with his tongue bitten. Had two more similar attacks in next few weeks and then none again for a year. Then came a few more. He took

medicine which controlled the acute attacks, but had confused spells which increased until last fall, when the unconscious attacks returned. In March, of this year, he had a very bad spell, after which he was violent with his wife and her mother; then had one or two in the night and finally a series of eight attacks in one day, at which time he was placed in a hospital for observation. The attacks came on with a sense of bewilderment, confusion, and irritability. "Objects appear to grow further apart or double up, and then close together again." There is also violent palpitation and a sense of tightness in forehead. Then follows a sense of numbness in the left forearm. The attack frequently stops at this point or it may go on to a gurgling cry, falling, tonic then clonic spasm with unconsciousness, frothing and biting of lips and tongue. Sleep follows at times, at others he comes to himself at once.

Physical Examination—The patient is exhausted and has a strong acetone breath. The lips are badly bitten and swollen and a front tooth is broken off. He acknowledges gonorrhœa but denies having had a chancre.

Skull—Examination of the skull by palpation reveals nothing of importance and there are no scars visible except a suggestion of one to the right and below the occipital protuberance. The pupils react to light and accommodation and are equal. Eye movements are normal. Tongue protrudes straight; has a flaky white coat and teeth dents. Teeth in bad condition, front upper and incisors broken off.

Chest—Respiratory sounds normal; apex beat in fifth intercostal inside nipple line. Heart sounds normal.

Abdomen—Stomach lower border, half way between cartilage and umbilicus, as outlined by percussion note after a drink of water. Small fæcal accumulations in lower bowel. A questionable first degree displacement of right kidney.

Skin—Moist and soft; color—tawny-yellow.

Station, O. K.—Can walk straight line; slight tremor of hands; knee and wrist jerks normal.

Urine—The urine is loaded with Indican but is otherwise normal.

Blood—The blood gives a positive Wassermann reaction.

What is the diagnosis and from what should it be differentiated?

At the February meeting of the Boston District of the Massachusetts Homœopathic Medical Society, which was wholly clinical, there were presented three unusually interesting papers. The third of these is the following, entitled:

PURULENT PERICARDITIS.

By Nelson M. Wood, M.D., Charlestown, Mass.

Purulent pericarditis is fortunately not a common disease, at least, such seems to be the case, and a large percentage of the cases are not recognized until they reach the autopsy table. For this reason, and also the fact that every case of rheumatic arthritis, tonsilitis, diphtheria and other acute diseases more or less septic in type, has the possibilities of the development of this serious condition, I venture to report a case observed in the present medical service in the Mass. Homœopathic Hospital.

The patient, Mr. A. D., was sent to the Hospital January 1 by Dr. Charles I. Porter of Canton. He was an American, 5 ft. 7 inches in height, weighed 235 lbs., in appearance short and stout, motorman by occupation. Family history good. Father and mother both living. No brothers or sisters. Past history:—always had been well, not even children's diseases, until two and a half years ago, when he had rheumatic fever. All joints were sore, with persistent recurrences. He was in bed four months. In a short time had a relapse, and was ill in bed three weeks more, with all joints swollen and very painful. After this, bowels were always very irregular, and depended on cathartics. Otherwise his health after this was good, except for trouble with his feet,—probably due to fallen arches, and dyspnœa on exertion. He could not walk or lift without being affected to a considerable degree, and always had rapid respiration.

The present illness began Dec. 20, 1911, with pain in his neck, and headache, with symptoms of a cold and urticaria for two days. Inflammatory symptoms occurred first in the wrists, gradually following in the other joints, but not severe, and he could always move them. From the first had great mental despondency, predicted his death and wanted to arrange some business affairs. About the third day after this, all pains left; temperature 101 at night, pulse 86, respiration rapid. The next day very comfortable, pulse and temperature not known to me. The day following, delirious, with temperature 104. (I do not know whether this was preceded by a chill or not.) The next day temperature had fallen to 101, and he seemed very comfortable, joints somewhat swollen, but not very painful. The next day temperature again 104 1-2, but had no pain and felt well. Abdomen was distended with much gas; somewhat delirious. The day following a consultation was held with Dr. Swan of Stoughton. He was at this stage sent into the Hospital.

Upon arrival, face flushed, pupils dilated, tongue red, dry, coated, difficulty in protrusion, tendency to delirium, temperature 104 1-2, pulse 120, respiration 40; abdomen distended and tender;

wrists and fingers somewhat swollen, painful, slightly red at knuckles; ankles white, puffy, with swelling. Heart sounds very indistinct all over cardiac area; no friction sounds or murmurs. Pulse soft, lungs negative. He did not like to be disturbed, as he was much worse after motion or manipulation of parts. Uranalysis showed kidneys free from organic disease, but rather low excretion of solids.

Jan. 2nd. Blood examination showed a leucocytosis of 20,000, neutrophilis 93 per cent, Widal—negative.

Jan. 4th. Blood examination more complete showed hæmoglobin 100 per cent, red discs, 5,000,000 leucocytes, 48,400, neutrophiles 90 per cent, Widal—negative.

Jan. 5th. Leucocytes, 48,000, neutrophiles 90 per cent, Widal —negative.

During these five days his clinical picture had been one of profound typhoidal state, most of the time irrational, vomiting nearly all water and nourishment; involuntary urination. At times quite a profuse perspiration. Temperature ranged from 101 to 103. Bowels were moved by enemas, and large, soft, clayish-colored stools or brown ones obtained. He seemed to be in a stupor at times, pulse weaker, taking but very little nourishment, complaining of pains in the head and abdomen on palpation. There was no rigidity of the cervical muscles. Kering sign negative in both legs.

Jan. 6th. Patient weaker, low, muttering talk; pulse weaker; involuntary movements and urination. Death occurred at 10 P.M., January 6th, six full days after admission. Drs. Percy and Calderwood of the medical staff and Dr. Watters saw him in consultation, and by the assistance of the blood examinations, even though the picture was decidedly that of profound typhoid, that disease was excluded and a diagnosis of purulent pericarditis was made, with possible acute malignant endocarditis, although no murmurs could be detected.

There was not any increase in area of dullness, in fact, there seemed to be more resonance over the cardiac area than usual. The diagnosis was established by the picture of profound general infection, the very slight and indistinct heart sounds and exclusion of other diseases.

The autopsy made by the pathologists showed as follows:

Pathological Diagnosis—Acute purulent pericarditis, acute infectious endocarditis, hypostatic pneumonia. Acute pleuritis.

The body is that of a well developed, well nourished man apparently about 45 years of age. Slight rigor mortis present; post-mortem lividity present.

Abdominal fat measures 5 cm. in thickness. Peritoneum

smooth throughout; shows no effusion. A very few fibrous adhesions present in the vicinity of the appendix. Diaphragm reaches the 3rd space on the right side and the 4th space on the left.

Right pleural cavity smooth; no adhesions; no effusion. At the base of the left cavity are a number of loose, fibrinous bands causing a partial adhesion of the visceral and parietal layers. In one place a small patch of fibrino-purulent material is present at a point in the immediate vicinity of the pericardium.

Pericardium smooth; slightly injected. Cavity contains 10 c. c. (estimated) of a light greenish-gray purulent fluid. No fibrinous adhesions are noted.

Heart—Myocardium very soft and flabby throughout. Endocardium smooth except at the edges of the mitral and the aortic valves. Here minute, soft, delicate vegetations are found, causing slight roughness to the surface.

In the lower left lobe of the *lungs* is an irregular patch of partially consolidated tissue, dark red in color and involving an area approximately 6 cm. in diameter. This area contains an increased amount of blood, and also contains some air. Except for this, both lungs are crepitant throughout.

Examination of *liver* fails to show evidence of any abnormal condition.

Spleen shows marked lobulations. Slight increase in size, and an increased softness. Corpuscles indistinct.

Alimentary Tract—Careful examination is made of the ileum for the presence of possible ulcerated areas, but with entirely negative results. Pyers' patches moderately distinct.

Kidneys—Cortex rather pale yellowish-white in color, and soft. Differentiation between cortex and medulla not distinct. Renal pelves negative.

Brain—In the sub-arachnoid space is an abundance of clear, serous fluid. Except for this no abnormal condition is found.

Discussion by Dr. Calderwood: Looking at the case from the standpoint of diagnosis, there are five things that might come to the mind to be differentiated among, in this man's condition. The first would be possibly some abdominal condition. We get the picture as Dr. Wood presented it—this man was typhoidal in appearance. He was unconscious part of the time, was delirious at times, face flushed, abdomen tender, did not want to be moved, etc. A perfect picture of typhoid. The history would rule out any abdominal condition, perforated appendix, gastric ulcer, or anything of that kind.

Meningitis—we could get these symptoms in the cornea and in the stiffness of the neck.

As to the delirium and the temperature, this case resembled typhoid most markedly. There were only two things which would lead you to be suspicious. One was the delirium, which came on a little early for typhoid, and the other was the blood count, which was 20,000 at least. In typhoid you expect it to be low.

Pneumonia—it looked a good deal like a case of pneumonia as well as typhoid. He had this eruption which you often get with pneumonia, as well as typhoid. His face was flushed, with delirium. The high leucocyte count would come on with pneumonia. He had low chlorides in the urine. The principal thing against pneumonia was his history of ten days and his temperature, which was up and down. Of course we did not find anything in his lungs.

That left us with the endocarditis. I doubted the history of rheumatism. We found very faint heart sounds, tenderness over the spleen and abdomen. He had this eruption, which you might get with a septic endocarditis, and the leucocyte count. I think the most characteristic thing of all which would make one think of endocarditis was the temperature, which was up one hour perhaps to 104, and perhaps two or three hours later it would be down to normal, or even a little subnormal.

FOR SALE.

The home of the late Dr. Virginia F. Bryant, on the rock-bound coast of beautiful Nahant. A house of fifteen rooms, electric lighted, heated by furnace and open fire-places. A most desirable location for a sanatorium or convalescent home. For information and terms address Miss Dixie Lee Bryant, Nahant, Mass. (See illustration above.)

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business, should be sent to the Business Manager, 422 Columbia Road, Dorchester, Boston, Mass

EDITORS:
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ARTHUR H. RING, M.D.

Reports of Societies and Personal Items should be sent in by the 15th of the month previous to the one in which they are to appear. Reprints will be furnished at cost and should be ordered of the Business Manager before the article is published.

DR. WATTERS RETIRES AS EDITOR OF THE GAZETTE.

For the past six years Dr. W. H. Watters has been managing editor of the *Gazette*. That he has done his work well is a logical conclusion, for Dr. Watters does nothing other than well. The old saying that if you want a thing done get a busy man to do it and it will be done is well illustrated in this case.

Mention of some of the things Dr. Watters has been doing while one of the editors of the *Gazette* will show the busy life he leads. As Professor of Pathology in Boston University School of Medicine he has for years been giving daily instruction to the students in that branch of work. As pathologist to the Massachusetts Homœopathic Hospital he has done an enormous amount of work, both routine and research, the latter of such intrinsic value that we cannot even outline it. More recently he has been acting as Assistant Medical Examiner of the County of Suffolk. Incidentally he has been earning a living for himself and family and taking a man's place in the world of men.

Never possessed of robust health, Dr. Watters has had to pay tribute to that very enemy which he has so many times worsted in the fight for others and against which he has forged such powerful weapons in his laboratory research. We can therefore say most truthfully that in giving so much of his strength to the *Gazette* he has put his very life's blood into it.

In vacating the editorial chair Dr. Watters does not seek idleness, but rather steps into more exacting work. In connection with the Evans Memorial Hospital Pathological Laboratory he assumes new burdens and new responsibilities.

Being pre-eminently fitted for just such work, it is far better

that he should use his time and strength where it will count for the most.

We have long maintained that the next logical step for Homœopathy is to prove by laboratory tests the truth of the Law of Similars. When we can give ocular demonstration of the affinity of certain anatomic cells for certain drugs which by *clinical tests* have been proved as directly affecting structures made up of such cells, then we have won our case.

It is because of what Dr. Watters may be able to accomplish with the rich equipment of the new laboratory that we more willingly, though reluctantly, bid him farewell in his retirement from the *Gazette* and wish him a hearty Godspeed in his new position.

THE CLIMACTERIC OF THE GAZETTE.

It has been estimated that a woman does her best intellectual work after passing the menopause, that her harvest of intellectual accomplishments comes after the cessation of ovarian activity. Be that as it may, we do know that every woman who passes this trying period safely obtains a mental poise which exceeds that previously possessed.

The *Gazette* has just passed its forty-sixth birthday, and now a change of life has taken place, a new editor has been installed. Whether, like the average woman, it will now show an increased mental activity and do its best intellectual work, or whether, like the unfortunate few, it will become cranky and hysterical remains to be seen.

It is fortunate, however, in the possession of one thing which is essential to every woman as she passes through this state, and that is a good medical advisor. The steady hand which has so long shaped the policy of the *Gazette* will continue to exert at least a moral influence.

Going back to the beginning we learn that the *Gazette* was possessed of admirable parentage. The name of the late Henry C. Angell as its first editor is a guarantee of its legitimate birth. When two years old its tutor was that prince among men and physicians, Dr. I. T. Talbot, of whom there has not since appeared a peer for breadth of vision, accomplishment of deeds, loyalty to the school and unflagging zeal.

After five years, Dr. Chas. L. Nichols took charge, then came Dr. Walter Wesselhoeft and Dr. Charles G. Brooks. During 1876, 1877 and 1878, Dr. Herbert A. Chase and Dr. John L. Coffin were editors; for 1879, 1880 and 1881, Dr. Herbert C. Clapp was the able editor. During the next two years the work was divided amongst eight men, who in turn shaped the destinies of the growing child. In 1884 Dr. John P. Sutherland became editor, and the efficient,

untiring work which he put into it has made it all that its splendid parentage and scholarly bringing up dared hope for.

Owing to the pressure of his duties as Professor of Anatomy and acting Dean of the School of Medicine, it became necessary for Dr. Sutherland to relinquish his work on the *Gazette* in 1897, and Dr. John L. Coffin resumed the editorship at the beginning of 1898, continuing through 1902, during the latter part of which period Dr. A. T. Lovering was assistant editor. At the end of 1902 Dr. Coffin resigned, and Dr. Lovering became editor and remained at the head until October 1904, when the management was taken over from Otis Clapp & Son by a group of physicians under the name of the Gazette Associates, with Dr. Walter Wesselhoeft as editor-in-chief.

In 1906 Dr. Watters assumed the burden of the work, although Dr. Sutherland continued to act as consulting editor and will still have a judicial hand in governing the course of the now grown up, middle-aged *Gazette*.

Dr. Arthur H. Ring became associate editor with Dr. Watters in 1911 and will continue to act as such under the new arrangement. Dr. DeWitt G. Wilcox now takes Dr. Watters' place as managing editor. No small credit is due the business managers who have carried successfully the financial burden of the *Gazette*, and especial credit is due the late Dr. Wm. K. Knowles, whose successful efforts saved it at one time from financial failure. Since his death in January 1907, his widow, Mrs. Lillian G. Knowles, has been the able business manager and treasurer of the Company.

Occasionally we hear the subtle criticism that the *Gazette* was born a trade journal and has never outgrown the birthmark. Nothing is further from the truth. It never was and never has been for a moment a trade journal. It was conceived by the profession, born into the profession, had professional attendants at birth, and has been brought up on nothing but strict professional diet of the most approved stamp.

It has never been as much as "farmed out" to anybody but the profession.

The fact that the old and well known drug house of Otis Clapp & Son began to publish the journal eight years after it was born and continued to publish it for years does not even by inference carry the impression that it was a trade journal, for be it remembered that the firm of Otis Clapp & Son was not only a drug house but was also a publishing house, in those times one of the few houses publishing homœopathic literature.

What was more natural than that this firm, located in Boston, should publish a Boston homœopathic publication? It never in

any sense dictated its policy, never had a word to say as to its editorial management.

The *Gazette* has been published for the past six years by the Medical Gazette Publishing Co., Boston, which has not the slightest relation with any drug house. The future, like the past, will be an endeavor to make it an up-to-date medical journal in the broadest sense of the word. And while it is an homœopathic journal, yet we claim "*all* that pertains to the great field of medical knowledge to be ours by inheritance, by tradition, by right," and we shall seek to cull from that broad field whatsoever seemeth good in the healing art.

Looking at it in the broadest sense, Homœopathy is but one of a number of therapeutic measures, but it is one of the few which has stood the test of time and has become a recognized method of cure. We do not claim that it is the only method of cure, but we do claim that in the selection of an internal remedy for the treatment of such diseases as are amenable to internal medication the law of similars is the only true, scientific law which has up to the present given even a modicum of evidence of scientific value.

We do not claim a belief in the virtue of any remedy which has been attenuated beyond the demonstrable divisibility of matter. Whatsoever things are good, whatsoever things are tried, whatsoever things are promising, from whatsoever source in the great field of medical science we shall hold to or approach with an open mind which shall discard only after the crucial test of experience.

WORKING OUR OVER-WORKED PROFESSION.

"For ways that are dark and tricks that are vain" commend us to the advertisers of proprietary medicines. Listen! Sanatogen and Formiment tablets have been extensively advertised of late in certain medical journals, and very reputable ones at that.

Not only were they thus advertised but the profession was extensively circularized. In that circular Formiment was alleged to be endorsed by a long list of reputable men whose names were household words to us. Behold now these same Sanatogen and Formiment tablets have lost step with the medical men and are keeping step with Vegetable Lydia, Syrupy Winslow, Papa John, Crick-in-the-back Doan, Malty Duff, and Pinky-Pale Williams, in the public press.

Why this side-step? Merely the second act in the little comedy of Working the Profession. To advertise in the journals meant a goodly number of testimonials from physicians; then it was easy to play the innocent public and lure it into becoming the "gullible guzzler."

Question: How much longer are we to be thus worked?

Answer: Just as long as our medical journals accept advertisements of preparations concerning which they know absolutely nothing.

Question: Is it not our business to know something?

Answer: Not only is it our business to know, but a moral duty which we owe to ourselves and the public.

To gain a reasonable idea of what the securing of testimonials for Sanatogen means, read the sixth advertising page of the March issue of the *American Magazine.* This is one of those publications which has taken the high stand of refusing to admit to its pages any questionable advertisements. It carries no patent medicine "ads." Yet here is an entire page "with a picture" advertising Sanatogen. Why this change of front on the part of the *American?* Simply because this preparation has been made to appear as absolutely genuine, owing to its alleged endorsement of 15,000 physicians, which is very possible after such adroit medical journal advertising.

What is the real truth about Sanatogen? It claims to be "a re-creator of health," "most reliable and scientific of all nutriments," "in certain diseases it has a specific action," "it is science's answer to the call of nerves," "the food answer to the hungry cry of impoverished conditions." It almost makes your nerves water to read it. That it is a food no one will question, just as a silk hat is a kind of dress, but one does not feel that he has complied fully with the laws of society when he strides forth adorned in a silk hat only! After learning the composition of Sanatogen one thing becomes quite evident, namely: that the exploiters must have fed upon something containing much more *real* nerve food than Sanatogen, else they never would have had the "nerve" to make such claims. A four-ounce bottle sells for $1.00,—next size $1.90,—largest $3.60. For the one dollar invested in Sanatogen the consumer gets what is equivalent in food value to six cents' worth of milk or one cent's worth of wheat flour. In this respect it is what it is advertised to be, a *food,* but to get enough Sanatogen to equal in food value a good fifty-cent restaurant dinner of roast beef and potatoes and bread he would have to take about one hundred dollars' worth of Sanatogen and then use the cork to keep it down.

When the hunter went out early one morning he saw a big grizzly bear. He said to himself, "Ah ha! I see in him my winter overcoat." The bear said to himself, "Ah ha! I see in him my morning breakfast." Very soon the hunter was inside the bear and both had what they wanted.

If the gullible public prefers to pay one dollar for one-half pint of milk with a pictured label, surely the exploiter is willing

and both are happy. But the grizzly will soon be hungry for another breakfast, and ere long the profession may be wearing the overcoat just as the hunter did.

If all reputable medical journals of whatever school will but stand together and refuse their pages to any form of advertising save that which has been passed upon by some competent, impartial body, which represents all the ethical medical journals, then we shall have no more such ridiculous spectacle as that of 15,000 physicians endorsing a humbug. The *Gazette* does not pretend to stand in any "holier than thou" position, but it is ready to begin the reform and proposes to continue it until ultimately its pages are shorn of everything that has not the stamp of unqualified approval.

STICK TO THE INDICATED REMEDY.

The exhibition of such a spectacle as the exploiting of the profession in advertising worse than worthless proprietary preparations, serves but to impress upon the mind of every homœopathic physician that he has in his indicated remedy a weapon against disease far more powerful than all the combinations and concoctions which the inventive mind of the pharmacist has yet devised.

It is really a lamentable sight to see the pages of our homœopathic journals bespattered with reading notices of proprietary remedies, some of which contain from ten to twenty drugs, none of which will approach in effectiveness what our well tried remedies will do, to say nothing of the harmful effect of such preparations.

It must cause a smile of derision on the face of an old school physician to read our journals wherein splendid articles tell of the cures effected by the indicated remedy, and then read in personals and advertising pages endorsements of compounds representing the worst form of drugging in huge doses.

Imagine Hahnemann treating any disease with a mixture of —he knew not what: simply taking the word of the manufacturer that it was good for what ailed you! Will any truly scientific physician of any school use such a concoction on the mere say so of the manufacturer? And yet, when a journal publishes a ready prepared "reading notice" of a proprietary product what does the editor know about it aside from what is printed on the label or the descriptive circular?

In the February issue of the *Gazette* is a fine article by Dr. Frank C. Walker of Nantucket on "The Future of Homœopathy." It is worth reading, for it has a good lesson on consistency.

OUR READING BUREAU.

(FOREWORD)

Under this heading will appear excerpts from and reviews of the various medical publications of the world, particularly those from the homœopathic publications. So far as we know there has been little attempt on the part of any of our homœopathic journals to make systematic reviews of our own publications, and as the old school journals do not review them they fail to receive as wide publicity as they deserve. Some of the ablest of our younger men in the profession will conduct this department, and we feel confident it will prove highly interesting and instructive.

The Homœopathic Recorder, March and April, 1912.

1. *Pneumonia and Acute Inflammations.*—Ellis, E. R.
2. *Notes on the Preparation of Homœopathic Remedies.*—Hinsdale, A. E.
   Reprinted from the Chironian. A scholarly work which should demand the attention of all students of materia medica. The author deals with the decided variations in physical properties of various preparations made by the homœopathic pharmacists.
3. *Medicine and Surgery.*—Heysinger, I. W.
   A plea for more homœopathic surgeons who are better acquainted with the actions and proper uses of drugs.

The British Homœopathic Journal, March, 1912.

1. *A Note on Blood-Pressure in Relation to Paroxysmal Vertigo.*—Alexander, A. S.
   Brief discussion of causes of vertigo with reference to a case relieved by quinine sulph. 3 t. d. and later by tabacum 200th dil., together with Nauheim baths. The case is apparently one of Ménièrres' disease. The author gives the blood pressure before but unfortunately not after the Nauheim baths.
2. *Modalities, Clinical and Pathogenetic.*—Watson, J.
   Especial attention is paid to ameliorations and aggravations from heat and cold and atmospheric conditions in certain drugs.
3. *An Operation for the Relief of large Umbilical Herniæ.*—Shaw, C. K.
4. *Two Cases of Urethral Calculus.*—Mason, H.

Iowa Homœopathic Journal, April, 1912.

1. *The Tonsils are Evidence of High Breeding.*—Linn, E. G.
   The author is in favor of removing diseased tonsils, but "Tonsils, free from disease, even though of considerable size, should remain undisturbed." The reviewer would like to ask how large a tonsil has to be before Dr. Linn would call it diseased.
2. *Tubal Pregnancy.*—Johnston, B. R.
   A review of some of the current literature, together with a report of one of the author's cases. Differentiation of intra- and extra-uterine pregnancy. The discussion is devoted to the expression of very biased opinions regarding the relative value of hot and cold applications to the abdomen.
3. *Neurosis in Gynecology.*—Kemp, M. E.
   The author makes it a rule never to begin symptomatic treatment without satisfying himself that the case cannot be relieved by some sort of mechanical treatment. The importance of informing young girls as to the meaning of the menstrual function.
4. *Appendicitis.*—Fairbanks, C. L.
   Until pus forms the treatment is medical; after pus forms the treatment is surgical. The medical treatment consists of a two quart saline enema followed by colonic massage, and accompanied by Merc. dulc. 1x every hour and Bell.ϕ mss alternating, and hot flax-seed poultices. The author states that in his 18 years of private practice he has never lost, or had an operation on a case of appendicitis. We would like to ask how many cases of appendicitis the author has treated in this apparently successful manner.

North American Journal of Homœopathy, April, 1912.

1. *Hygiene in the Treatment of Nephritis.*—Sprague, E. R.
2. *The Ocular Manifestations of Syphilis.*—Linnell, E. H.
3. *Subparietal Rupture of the Kidneys.*—Schall, J. H.
   Operation. Ultimate result.
4. *On the Laws of Dose and Cure.*—Woodbury, B. C.
   Woodbury discusses the action of medicines according to the law of "similia, similibus curantur." He reviews Hahnemann's definition of the 3 principles of drug application, Hempel's theory of attractive affinity, Hale's argument for the curative effects of medicines and the determination of the dose. He also reviews the ideas of Dunham, Hering and Nash on the primary and secondary action of drugs and their relation to prescribing. The author then goes on to elucidate his own theory by means of mathematical formulæ.
5. *The Principles on Which Certain Forms of Electro-Therapeutics Are Based.*—Chapin, E.
6. *Ipecac.*—Mills, W. S.
   Asthma in a child relieved by second potency. Catarrhal pneumonia, crisis following administration of drug in 200th potency.
7. *Ten Remedies Prescribed on one Keynote.*—Waffle, Willella H.
   "The pleasure one derives from being able to prescribe a remedy having only one positive, unique indication for so doing, the effect of which is eminently satisfactory in every way, is beyond the power of words to describe." If this is homœopathy.—Good-night!
8. *Calcarea Carbonica.*—Wheeler, F. J.
   The author describes the observed effects on hens' eggs after the administration of this drug in the 30th added to the hens' drinking water. The observations resemble the results of drug provings where no check proving is made, and where the symptoms are those of everyday life but to which no attention is paid.
9. *Picric Acid and its Compounds.*—Blackwood, A. L.
   A review of its symptomatology and its indications.

Pacific Coast Journal of Homœopathy, April, 1912.

1. *Two Clinics and Two Questions.*—Anderson, Alice G.
2. *The Abuse of Surgery in Gynæcology.*—Bishop, H. M.
3. *Use of Bismuth Paste in Tubercular Abscess involving the Ischium.*—Hunt, J. S.
4. *Materia Medica.*—Shepherd, Hovey L.
5. *A Case illustrating Homœopathic Prescribing.*—Dewey, W. A.
   Trigeminal neuralgia (infra-orbital branch) of six months duration. Complete relief within one week under Rhus. 30th four times a day. No return of symptoms. The author takes up the course pursued in the selection of this drug.
6. *Cases from Practice.*—Waffle, Willella H.
7. *The Use of Arsenic in Heart Affections.*—Grenier, F. W.
   In this meagre contribution the author compares the symptoms of broken compensation with the symptoms of arsenic. He lays special emphasis on its value in fatty degeneration of the heart. He disagrees with Farrington that arsenic involves especially the left heart while phosphorus affects the right heart, because no matter where it starts both sides are sooner or later affected. He prefers to give it in the form of Fowler's Solution, five to eight drop doses three times a day.
8. *Case of Duodenal Ulcer.*—Campbell, Robert A.
   Operation, death, post-mortem.

The Chironian, April.

1. *Medical Education in France.*—Raisbeck, M. J.

A paper containing information which should be read by those who are interested in teaching medicine. The writer discusses the influence of German thought and methods which has increased the amount of labora-

tory training in our medical schools. The medical student in France enters the hospital at the same time that he enters the medical school, and of the two, the hospital is given by far the greater consideration and importance. Before entering the medical school, the student must present a baccalaureate diploma and a "certificat d'Etudes Physiques, Chemiques et Naturelles." These two diplomas represent a vast amount of work, and it is usually completed at the age of 19. The French student knows how to study more efficiently, he has more mental energy, but he has less physical strength than the American student. This disrespect for his bodily welfare too often leads him into evil ways and to mental and physical ruin.—*To be continued.*

2. *An operation for Closure of Cleft Palate by Gradual Pressure.*—Shea, B. F.
3. *Treatment of Extrauterine Pregnancy.*—Tuttle, E. G.

Authors who state that 5 per cent of their abdominal sections have been for ectopic gestation are specializing in gynæcological or obstetrical work, or draw their cases from the poorer class in which inflammatory diseases of the tubes, one of the predisposing causes of extrauterine pregnancy, are frequently found. Treatment should always be salpino-oöphorectomy, done during the ascending wave of reaction. After treatment.

4. *Proctitis, its Treatment and Influence upon Other Rectal Disorders.*—von Bonnewitz, O. R.
5. *Peritoneal Adhesions.*—Grant, A. R.
6. *Underfeeding in Infancy, and the Obstetrician.*—Minton, H. B.

Starvation is as important a factor in infant mortality as unclean milk. Starvation is too often not recognized until too late. "First starvation, then an indifferently selected substitute feeding, which is usually a continuation of the starvation under the pretense of artificial feeding, and then months of inanition to repair the error of a bad start." There is no profit to the infant to starve to death on a food whose only merit is its ease of digestion. In all cases it is wise to institute mixed feeding to the extent of one bottle a day after the first month, in order that it may be prepared for cow's milk should the natural supply be suddenly cut off.

7. *The Place of Antitoxin and Intubation in the Treatment of Diphtheria.*—Bedford, E. R.

Antitoxin does not act homœopathically but as an antidote. The importance of sufficiently large doses.

8. *Hahnemann and his Wife.*—Berkley, Helen.

BOOK REVIEWS.

Surgical Operation. A Hand Book for Students and Practitioners. By Prof. Friedrich Pels-Leusden, Chief Surgeon, University Surgical Clinic, Royal Charity Hospital, Berlin, translated by Faxton E. Gardner, M.D., N. Y. Published by Rebman Company, 1123 Broadway, New York City.

This book is neither too elementary for the practitioner nor too advanced for the student but is a practical, concise treatise on general surgery taken largely from the author's rich experience. One essential too often omitted from larger work is the postoperative treatment of surgical cases.

Dr. Pels-Leusden says in his foreword what is emphatically true but too little practiced, that in teaching surgery in operative clinics much more can be learned by splitting the classes into small groups, thereby enabling those few to obtain a more detailed knowledge of operative technic. It is time lost to a student who is required to sit on the back row of a large operating amphitheatre and see only in a general way what is being done. It is far better for him to attend fewer clinics and see more detail.

The Individual in the Making. A Subjective View of Child Development With Suggestions for Parents and Teachers. By E. A. Kirkpatrick, B. S. M. Ph., author of Fundamental Child Study. Houghton, Mifflin & Co. The Riverside Press, Cambridge, Mass.

The first sentence in the book is the key-note of its contents. "The

ultimate standard of value among human beings is personality, hence its development is of supreme importance." The best way to cultivate and direct that personality is the object of the author. The book is well worth a careful study by everyone who is interested in character building,—and who is not?

Spiritism and Psychology. By Theodore Flournoy, Professor of Psychology in the University of Geneva, author of "From India to the Planet Mars"—translated by Hereward Carrington. Published by Harper Brothers, New York & London.

This book is, as its publishers say, a study of supernormal psychology, metapsychics and psychical research from the view point of the expert psychologist. The author claims not to accept the doctrine of spiritism as having been adequately proven. But he does accept the reality of telepathy, clairvoyance, materialization, which he thinks occur within the deeps of the subconscious mind. While the book is extremely interesting and shows the author's careful study of the matter in hand yet it falls far short of convincing one or even inducing a belief in clairvoyance, or materialization. In fact the belief in a subconscious mind is far from universal on the part of mental scientists.

SOCIETIES.

Massachusetts Homœopathic Medical Society.

The annual meeting of the Massachusetts Homœopathic Medical Society was held in the Evans Memorial Building on April 10, 1912. All the sessions were well attended and there were a number of interesting papers read, those deserving of particular mention being one by Dr. Watters on "Experiments in Immunization" and one by Dr. W. R. MacAusland of Boston entitled "Recent Advances in the Treatment of Fractures." Both of these were illustrated by the reflectoscope, an innovation which added much to the occasion. Dr. MacAusland's paper in particular was quite exhaustive and called out a very free discussion led by Dr. J. Emmons Briggs and Dr. A. G. Howard. The merits of the conservation and open methods in the treatment of fractures were gone into in considerable detail, as well as the indication for the use of bone plates. One feature of this paper not especially emphasized but very evident to the non-surgical listener was the wonderful part now played by the X-ray in all surgery of the hard structures of the human body.

The afternoon session was devoted to the general topic of eclampsia, a number of papers being presented, taking up the subject from several points of view. These papers were of real interest, and the discussion called out was extended and instructive. A healthy difference of opinion in regard to the treatment of eclampsia was manifested, but on the whole the result of the symposium helped again to prove the wisdom of the present method of arranging the meetings. This was the second meeting to be held under the guidance of a committee of arrangements, acting under the new by-laws, whose duty is to arrange the full program for a single meeting. The result both at Lowell and in Boston has been increased interest and a certain concentrated effort impossible in recent years under the old bureau system.

The members were disappointed in not being able to meet Dr. L. L. Danforth of New York, whose name was on the program to open the discussion of the papers on eclampsia. A telegram was received from Dr. Danforth during the afternoon, stating that he was unable to leave his office.

The necessity for systematic effort in obtaining suitable discussion was emphasized by the absence of the majority of those whose names were on the program to participate in this feature of the afternoon. It would seem wiser to have some assurance of the presence of those who are scheduled to take part in the discussion even if fewer members were used

for that purpose. Fortunately, in this instance there was no lack of interest and no lack of ability on the part of members to discuss the papers intelligently and profitably, but this might not always be the case with other subjects.

On the whole, the scientific sessions may well be a source of satisfaction to those who had them in charge.

The business meeting was called to order at 12 o'clock promptly and reports from the various officers read and approved, that from the committee on amendments to the by-laws bringing out a short and rather animated discussion, resulting in a vote to "table" the report. Dr. N. R. Perkins reported for the legislative committee a list of bills which had been presented at the State House during the winter, and the action taken as far as it related to our Society.

The election committee reported the following list of officers for the coming year:

President, George R. Southwick, M.D., Boston.
1st Vice-President, J. Herbert Moore, M.D., Brookline.
2nd Vice-President, John H. Bennett, M.D., Pawtucket, R. I.
Recording Secretary, Edward S. Calderwood, M.D., Roxbury.
Corresponding Secretary, Benjamin T. Loring, M.D., Watertown.
Treasurer, Thomas M. Strong, M.D., Boston.
Chairman Board of Censors, Fred S. Piper, M.D., Lexington.

Luncheon was served in the biological laboratory of the Medical School and proved to be an enjoyable occasion, especially so on account of the facilities for getting together in social intercourse,—so much better than at any recent meetings of the Society.

About two hundred members and friends gathered for the banquet at Young's Hotel in the evening, and if one may judge from appearances everybody seemed to have a thoroughly good time. The meeting was called to order by the president, Dr. Frank W. Patch, soon after seven o'clock, and Dr. Herbert C. Clapp spoke briefly in relation to the birth of Samuel Hahnemann, the meeting having fallen on the anniversary of that day. Dr. Clapp's remarks were listened to with interest and attention, and he proved as enjoyable as always. The president's address dealt wholly with matters of improved organization of the homœopathic physicians of the State, attention being called to certain points where we are at present unable to care for those demanding our attention, and urging the Trustees of the Massachusetts Homœopathic Hospital to attempt to close up these gaps as soon as the means can be found to do so.

The other speakers of the evening were Mr. John M. Merriam, member of the Board of Trustees of Westborough State Hospital, and Mr. Edward H. Mason, president of the Board of Trustees of the Massachusetts Homœopathic Hospital. Both emphasized the necessity for active co-operation on the part of our members throughout the State and further effort to make it possible for us to care for every patient presenting himself at our doors in our own buildings and through the agency of our own members.

Connecticut Homœopathic Medical Society.

The sixty-second annual meeting of the Connecticut Homœopathic Medical Society, Royal E. S. Hayes, M.D., Secretary, is to be held at the Hartford Club, Prospect St., Hartford, on Tuesday, May 21, 1912, at 10 o'clock.

A good program has been arranged, one number of which is to be an address by Dr. W. H. Watters, of Boston University, on "Phenomena Underlying the Cure of Infectious Diseases." Homœopathy and surgery will also be represented in the program.

The Society is to dine at the Club.

WESTBOROUGH STATE HOSPITAL AND DR. GEORGE SMITH ADAMS.

The Westborough State Hospital, formerly Westborough Insane Hospital, was opened for the reception of patients by proclamation of the Governor of Massachusetts, Dec. 1, 1886. The movement which led to the establishment of this hospital as a state institution under homœopathic control is too familiar to readers of the *Gazette* to bear repetition, and every unprejudiced person will admit that the reputation which Westborough has established for itself in the intervening years has more than justified its existence. All homœopathic physicians in this section of the country, and for that matter homœopathic physicians throughout the entire country, may take just pride in the work of Westborough State Hospital, for it ranks among the best public institutions on the continent for the care of the insane.

In 1886, at the opening of the hospital, Supt. Adams began his service as first assistant physician under Dr. N. Emmons Paine, then superintendent. Five years later, upon resignation of Dr. Paine, Dr. Adams was promoted to the position which for twenty years he has administered with ability and distinction. After more than twenty-five years of continuous service, he resigns his position at Westborough to accept the medical directorship of a private institution, Dr. Givens' Sanatorium, Stamford, Conn. In this period of a quarter century, Dr. Adams has seen the hospital grow from a comparatively small institution to one of the large hospitals of New England for the care of this class of unfortunates, and for more than four-fifths of this time has formulated its chief policies and directed its activities. All constructive work, and there has been much, has been done during his administration.

The *Gazette* feels it proper to call attention to the work which Dr. Adams has so long and so worthily conducted at Westborough. Many things might be singled out for mention, any one of which would reflect great credit on his management, but two achievements, each the corollary of the other, stand out most prominently. These are, (a) the segregation of the hopeful cases under the most favorable surroundings possible, the less hopeful, according to their physical and mental needs, under equally appropriate conditions; (b) unremitting efforts for the best medical treatment directed towards cure and betterment, as against a predominant custodial function which formerly was, and even now is to a great degree, the rule at many misnamed hospitals for the insane. From the very beginning of the hospital, the first consideration has been, how much can be done for the patient? Dr. Adams throughout his superintendency has insisted that this must remain the first consideration. How well the hospital idea has been followed, a perusal of the annual reports will show, and a visit to the institution would furnish convincing ocular demonstration.

In 1902 the Massachusetts State Board of Insanity recommended that the State hospitals under its supervision should conserve three chief functions: "(1) the study, treatment and cure of insanity,—the hospital idea; (2) the safe custody and humane care of the dangerous and infirm,—the asylum idea; (3) the restoration of the quiet, harmless and able-bodied to natural conditions of living, and their training into habits of industry and usefulness so far as their mental condition will allow,—the colony idea." Four years prior to this recommendation of the State Board, as the result of the warm advocacy of Dr. Adams, steps in this direction had already been taken at Westborough in the erection of the Talbot building, where quiet and favorable cases on admission and convalescents could be cared for free from the baneful influences of asylum wards. Westborough State Hospital, therefore, by reason of these preparatory measures, was at once able to start the development of an institution where such ideals as suggested by the State Board of Insanity could be realized. Today, with its psychopathic, asylum and colony groups, it stands as a splendid example of this type of co-ordinated divisions in a hospital for the insane as may

be found anywhere in America. For this fine result no small share of the credit must be awarded to Supt. Adams.

The executive details of a large hospital such as Westborough are alone sufficient to occupy exclusively the attention of a superintendent, but those who are familiar with Dr. Adams and his work know that in addition to the large administrative duties he has found the time not only to give the impetus but generally to lead the way in the purely medical activities of the hospital. In short, he has been an executive of proved ability as well as a psychiater of no mean order, happy combination in a superintendent of the modern hospital for the insane.

Westborough State Hospital will stand as a landmark of homœopathic achievement in New England and inseparable with those things which are of excellence in the history of this institution will be the administration of George Smith Adams.

Dr. Adams leaves with the regrets of all of his Massachusetts confrères, who wish for him continued successes in his new field.

STATE HOMŒOPATHIC HOSPITAL, ALLENTOWN, PENN.

During the present month, at Allentown, Pennsylvania, there is to be opened for the reception of patients a new state hospital, the first in that state under homœopathic control. Pennsylvania has been rather tardy in the matter of a state homœopathic hospital; New York, Minnesota, Massachusetts and California have long since established such institutions. It may be said of these homœopathic hospitals that in every instance they have been conducted with credit to our branch of the profession and their respective states, and with benefit to the patients committed to their care. Pennsylvania, though tardy, now makes amends in the large, well built and well equipped group of buildings for the immediate accommodation of 1000 patients, which has been so planned as to permit enlargement to the extent of doubling its capacity without disturbing the unity of the group.

For the superintendency of the Allentown Hospital, Dr. Henry I. Klopp, formerly assistant superintendent, Westborough State Hospital, has been chosen. Dr. Klopp, a graduate of Hahnemann Medical College. Philadelphia, 1894, went to Westborough soon after graduation, as junior assistant physician. Three years later, in 1898, he was promoted first assistant physician, and in 1903 made assistant superintendent. For eight years he was physician in charge of the psychopathic division of Westborough State Hospital, and by indefatigable industry and well directed enhusiasm established for himself an enviable reputation for efficiency.

Dr. Klopp has been recently president of the Worcester District of the Massachusetts Homœopathic Medical Society and for five years past the most efficient secretary of the New England Society of Psychiatry, an organization comprising among its membership the leading psychiatrists, neurologists and psychologists in this section of the country. Dr. Klopp enjoys a wide acquaintance in New England, where he is highly respected and greatly admired by all who have had occasion to meet him professionally and socially.

The Massachusetts State Hospitals Service loses a capable man in Dr. Klopp's departure. We can think of none of the younger men better qualified by experience and training to fill the responsible position to which he has been elected. The *Gazette* and his numerous friends in Massachusetts felicitate him upon this very deserved promotion and wish for him the largest measure of success in Pennsylvania. *S. C. Fuller, M.D.*

PERSONAL AND NEWS ITEMS.

Dr. Hollis G. Batchelder, (class of 1906, B. U. S. M.) of Dedham, Mass., was married on April 24 to Miss Dorothy Maynard, daughter of Mr. and Mrs. Laurens Maynard of Mill Valley, California.

Dr. Harry O. Spalding, class of 1897, B. U. S. M., has resigned from his position at Norwich (Connecticut) Insane Hospital and has accepted

appointment at Westborough (Massachusetts) State Hospital as Assistant Superintendent, succeeding Dr. Henry I. Klopp.

FOR SALE.—In a city within twenty miles of Boston, the practice and good will of a successful homœopathic physician and surgeon. Serious illness the reason for selling. Apply to "Z. Y. X.," care of *New England Medical Gazette*, 422 Columbia Road, Dorchester, Mass.

Dr. John A. Hayward, B. U. S. M. 1906, has accepted appointment at Trull Hospital, Biddeford, Maine.

Dr. Frank C. Richardson, Registrar of Boston University School of Medicine and Medical Director of the new Evans Memorial Department of Clinical Research and Preventive Medicine, Massachusetts Homœopathic Hospital, has been ill for several weeks as a result of overwork, and for a time was a patient in the new hospital. The *Gazette* is glad to be able to report his convalescence.

The late Oliver I. Kimball of Newton, Mass., bequeathed to Lynn (Massachusetts) Hospital the sum of $5,000, and $1,000 to the Free Home for Consumptives, Boston.

Framingham (Massachusetts) Hospital is to receive $5,000, by the will of the late Clara E. Wellman of Brookline, to found a free bed.

HOMŒOPATHIC PHYSICIAN WANTED.—For good reason, I wish to dispose of my business and property in Bucksport, Maine. A good country practice, real estate, horses, carriages, etc.; a fine home, office in house, in a beautiful village on the Penobscot River. No homœopathic physician within twenty miles. For particulars address Dr. George N. Towle, Bucksport, Maine.

Dr. Fredrika Moore, class of 1910, B. U. S. M., has removed from 16 Norwood St. to 31 Church St., Winchester, Mass.

Dr. Dana Fletcher Downing announces the opening of an additional office for the practice of his specialty at 419 Boylston St., Boston. Hours, 12 to 1 P.M. Office and residential consultations at other hours by appointment.

According to an announcement made by President Chas. D. Barney of the Board of Trustees, at a meeting of the Hospital Association, the sum of $200,000 has been raised towards the completion of an endowment fund of $1,000,000 for Hahnemann Hospital of Philadelphia.

Dr. E. A. Colby, of Gardner, Mass., expects to spend the summer and fall of the present year in Oregon. His address will be 319 Prospect Ave., Hood River.

WANTED—A Medical Missionary (woman). Wanted, a young woman physician to be associated with Dr. Emma J. Betow in the Margaret E. Nast Hospital (homœopathic) at Sienyu, Fukein Province, South China. The hospital was established seven years ago and has a capacity of seventy beds. It is under the management of the Woman's Foreign Missionary Society of the M. E. Church. For particulars apply to Mrs. R. L. Thomas, 792 East McMillan Ave., Walnut Hills, Cincinnati, Ohio.

WANTED—To complete a physician's file of the New England Medical Gazette, the following numbers:—

February and November, 1894
September and October, 1901
October, 1904.

Anyone having these numbers and willing to dispose of them will please communicate with the *Gazette*, care of Boston University School of Medicine, 80 East Concord St., Boston, Mass.

RECENT DEATHS.

Dr. Jesse J. Swan, of North Easton, Mass., on January 13. Dr. Swan was a graduate of Hahnemann Medical College of Chicago, class of 1882, and had been for many years located at North Easton.

Dr. Elmer E. Fuller, Hahnemann Medical College, Philadelphia, class of 1893, in practice at Plymouth, Massachusetts, died on February 6, æt. 49.

Dr. George B. Maxwell, for several years past in practice in Attleboro, Mass., died in Fort Worth, Texas, on February 29, of paralysis. Dr. Maxwell was a graduate of Chicago Homœopathic Medical College, class of 1894.

Dr. Henry C. Hallowell, for many years located at Quincy, Mass., died at his home on April 13. Dr. Hallowell was a graduate of Hahnemann of Philadelphia and a member of the Massachusetts Homœopathic Medical Society.

Applications are called for to fill vacancies in the house staff of Grace Hospital, Detroit. The Hospital has been enlarged recently, and during 1911 there were treated 3615 cases, medical, surgical and obstetrical. For information address Dr. Stephen H. Knight, 37 East Willis Ave., Detroit, Mich.

PLANS OF THE MEISSEN.

The resident members of the Meissen in Pittsburgh have planned a number of entertainments to be given the visiting ladies at the forthcoming Institute meeting in June.

As for instance: Luncheon and cards at the Country Club, automobile ride and garden party, musical and refreshments, etc., etc.

There will be more or less sightseeing, and there are many sights to see.

Mrs. J. H. McClelland, President. Mrs. R. S. Marshall, Chairman of Entertainment Committee assisted by Mrs. W. Alvah Stewart. Mrs. Verner S. Gaggin, Chairman of Hospitality Committee assisted by Mrs. S. M. Rinehart.

THE NEW ENGLAND
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ORIGINAL COMMUNICATIONS.

THE TREATMENT OF ECLAMPSIA.*

By Edwin W. Smith, M. D., Boston, Mass.

The treatment of eclampsia has presented many theories, which have always looked well in print but which have not worked out well, as eclampsia still remains the most fatal of all obstetrical complications, in hospital as well as private practice.

There seems to be no middle ground between the radical German school and the conservative English school, and America may be classed with the radical German school in the methods adopted by prominent writers.

Each faction condemns the practice of the other in no uncertain terms. Edgar says, "The ideas of those authorities (especially those of the British school) who do not, in the presence of urgent symptoms, approve of the induction of premature labor in the pre-eclamptic states, are hard to understand," while Tweedy, a past Master of the famous Rotunda Hospital and well known as an authority in England and on the continent, maintains that "Labor is never induced, nor is its onset to be desired. Should it unfortunately occur, its progress is seldom interfered with. In the one case in which we departed from this rule, the convulsions seemed aggravated rather than diminished by the complete delivery."

Here are two diametrically opposite views.

To substantiate his opinion, Edgar cites ten cases of eclampsia in 2200 cases of labor, with a mortality of twenty per cent., while Tweedy, in the seven years of his service as Master of the Rotunda Hospital, had seventy-four cases of eclampsia all treated by the conservative method, with a mortality of six, or 8.11 per cent. One series of twenty-nine cases covering a period of two years and ten months without a maternal death.

* Read before the Massachusetts Homœopathic Medical Society, April 10, 1912.

The report of the Rotunda Hospital for 1911 is not yet published, but the Master, Dr. Henry Jellett, in a personal letter to me dated February 25, states that he had thirteen cases last year, all treated by the conservative Dublin method, with two deaths which occurred soon after the patient had been admitted, one being moribund on admission and dying almost immediately, untreated, while the other died from rupture of a mesenteric vein and consequent hemorrhage, two hours after admission. All the others recovered.

The argument will be made that these results depend upon the fact that eclampsia in Dublin is of a milder nature than elsewhere, but this can be at once dismissed when it is seen that since the foundation of the Rotunda Hospital there is no record of so long a series of cases extended over so long a time with so small a mortality. Indeed, the mortality was 35.3 per cent. before Sir William Smyley re-introduced the morphine treatment. Success in these cases is due to the strict adherence to details, which will be taken up later in this paper.

From other hospitals we have less convincing reports. In 1909, our records show a mortality of 70 per cent. of eclamptic mothers and 80 per cent. of children born under these conditions, while in 1910 after the early induction of labor in the pre-eclamptic state, the mortality was 11 per cent. in the Massachusetts Homœopathic Hospital.

Bumm presents some remarkable statistics from vaginal Cæsarean section and accouchment force, reporting but one death in a series of 71 cases, but before the adoption of this method, on the other hand, he had the very high mortality of thirty per cent., and in the hands of other operators the rapid evacuation of the uterus has not been attended with satisfactory results.

Tweedy points out that it is strange if all the patients were admitted at a period sufficiently early to make his treatment effective, for if they were not all recent cases, there is an element of chance acknowledged by him that has aided him to obtain results which cannot be maintained.

Herman of London declares that the termination of pregnancy does not benefit the patient, and asserts that if the patient is forcefully delivered the danger incident to quick delivery is added to those of eclampsia, and even if Cæsarean section is adopted we are not certain of stopping the fits.

Zinke says that prompt evacuation of the uterus is poor policy, citing 90 cases, while Hirst, the only writer in America who advocates conservative treatment, cites 260 cases treated

by the two methods, and asserts that any form of accouchment force adds to the risk and increases the mortality.

Ferguson of Indianapolis publishes an able paper with a plea for conservative treatment, with a report of three cases of ante-partum eclampsia which all recovered.

In my own experience at Dublin and the Schauta clinic at Vienna, I have never seen labor induced in the pre-eclamptic state as a prophylactic measure, and a recent letter from Dr. Leighton, associated with Professor Frankl in the pathological department of the Schauta clinic, states that at present accouchment force is not done in the treatment of eclampsia and that labor is not induced.

All the cases which I saw in both hospitals were treated by conservative methods and all recovered. That they were not all mild cases is evident, as one case totalled seventy-nine convulsions in two groups, with a period of consciousness of forty-eight hours between the two, and all the convulsions were of a severe type. This patient recovered.

Statistics are not convincing, however, and the great need is for some simple plan of treatment which can be carried out with few assistants and a minimum of shock and manipulation. To quote Ferguson, "The physician who is called upon to meet the emergency of a puerperal convulsion is compelled to choose a treatment that is at once condemned by a large number of eminent authorities. He knows that in the event of a fatal outcome to child, mother or both, he will meet the criticism of a large number of intelligent physicians. He will spend many anxious hours weighing the pros and cons for various treatments, for any of which he can find high authority and, what is more disquieting, equal condemnation. Hamlet's 'To be or not to be' is a mere primary psychological exercise compared to what the obstetrician suffers, for the unhappy Dane had only his own future to consider."

Treatment will be considered under two heads.

1. Prophylactic Treatment.

All the warring factions agree upon the prophylaxis of eclampsia as being of the utmost importance and to be effective it must exact the most careful of observations and the utmost vigilance. It does not mean that the home of the expectant mother be turned into a laboratory and that her mind should be filled with the ever present danger of blood and kidney complications, and, on the other hand, it does not consist of an occasional haphazard urine examination and a blind trust in divine Providence.

To the watchful man, œdema, constipation, headache, pain

in the pit of the stomach, and particularly visual disturbances, whether or not preceded by persistent nausea and vomiting in the early months of pregnancy, alterations in blood pressure and diminished excretion of urea, must at once spell danger and the necessity for intelligent treatment. The matter of alterations of blood pressure has not been worked out to the satisfaction of many men, but there is no doubt that kidney conditions can be diagnosed with a degree of certainty by a careful following of the blood pressure changes. A deficient elimination means more blood and at a higher pressure to eliminate the normal amount of solids and toxins. Excessive blood pressure is very characteristic of eclampsia; 150, 200 and even 300 mm. of mercury has been recorded in a case of eclampsia.

Cases in which the normal fall of blood pressure a few minutes after delivery does not occur deserve careful investigation, especially if albumin is present in the urine.

The exact condition leading to eclamptic convulsions remains unexplained, but is unquestionably a toxæmia of some sort, and in treating the symptoms of the pre-eclamptic state it is necessary to prevent the addition of any new toxic material and to eliminate the toxins already in the system.

Fortunately, there are five channels which may be stimulated to active eliminative functions,—bowels, liver, lungs, kidneys and skin. The selection of a drug must include something which will stimulate one or all of these excretory channels, preferably all of them, as one is closely related to another. For example, a diuretic will not produce any satisfactory results if the bowels remain clogged with putrefactive material, and an active skin elimination relieves a hard worked kidney.

Osler dismisses the question of diuretics with a few words, saying that plain water, distilled or with a little acetate of potash or benzoate of soda, is the best diuretic. He also recommends digitalis when the pulse rate is low and tension is not marked, and nitroglycerin when the pulse rate and tension are high.

Other authorities recommend thorough purgation with salines, Edgar recommending a pill containing colocynth and aloes, followed by a saline.

In my own practice I have had very prompt and satisfactory results from a formula of Edgar's, containing one grain each of digitalis, squills, and calomel, with a twentieth of a grain of pilocarpine muriate, to each dose. One dose is given and repeated in four hours, followed by a generous amount of Rubinat, Villacabras or any other selected saline purgative or mineral water.

Six cases have had this treatment with almost immediate improvement. There has been free action of the bowels, profuse sweating and relief of headache and visual disturbance in all the cases. The skin is stimulated with warm baths, massage, flannel clothing to prevent chilling of the surface, and free drinking of distilled water to promote diaphoresis.

When the toxins have been in a measure eliminated, the diet must be arranged to limit the ingestion of indigestible foods, particularly the nitrogenous variety. Starvation for twenty-four or thirty-six hours, with a liberal allowance of drinking water and strict milk diet following, has promptly cleared up many threatening cases, when combined with thorough eliminative measures. Œdema is reduced and the amount of sodium chloride excreted in cases where there is salt retention is increased by this method.

With milk diet and fruit in the form of orange pulp, grape fruit pulp and grapes minus seeds and skins, the prospective mother gets on very happily for an indefinite time.

Second in importance to the regulation of diet in the pre-eclamptic state, is the enforcement of absolute rest. Just as the stomach washings in a case of convulsions can almost always be found to contain some indigestible food, so can the onset of the convulsion be traced to some unusual exertion as an exciting cause. The importance of exertion as a direct exciting cause of convulsions cannot be disregarded when the question of inducing labor in the pre-eclamptic comes up for decision. Toxins are liberated and blood pressure is raised by the physical exertion of labor, which may only precipitate the impending crisis instead of proving a practical means of terminating the toxic condition.

There is a great difference of opinion as to the wisdom of inducing labor in this state and plenty of authority on both sides. Dr. Blodgett of our own Hospital (Massachusetts Homœopathic) comes out very strongly in favor of terminating pregnancy by the quickest possible method when the urinary findings indicate that convulsions are inevitable. Unfortunately we are not all qualified to pronounce judgment with such accuracy and have not his enormous experience in the observations of abnormal kidneys.

To the average man the induction of labor is beset with many difficulties. These are deserving of a brief consideration.

Sepsis may be practically ruled out as an objection to the induction of labor, since the introduction of aseptic methods and rubber gloves, as the uterus may be entered safely, but the induction of labor is at best a very uncertain process, no matter what method is employed. Introducing sterile bougies, sea-

tangle tents, sterile gauze or iodoform gauze tampons through the cervix, or even rupturing the membranes and placing the hydrostatic bag has often produced nothing but long and vexatious delays, Tweedy reporting one case going six days after the rupture of the membranes without pains. Twenty-four hours of the time included the wearing of the hydrostatic dilator, which was introduced after the cervix had been artificially dilated to five centimeters.

Repeated ineffective efforts to bring on labor meet with strenuous objections from the patient and her family, which add to the difficulty of the situation.

It is too much to assert that all cases of threatened eclampsia can be so managed as to absolutely avoid serious trouble. The personal factor must be considered and no system, however thorough, is successful without the intelligent co-operation of the patient herself. On the other hand, it is equally certain that most cases of this sort go on to serious conditions because of lack of care and attention and that these cases can be carried on to a normal and satisfactory conclusion by proper diet and elimination without being allowed to go on to the state which demands immediate and radical methods involving the sacrifice of one or both of the most interested parties.

If, after a thorough trial of all preventive measures, the condition goes on from bad to worse, a quick and clean Cæsarean section would seem the most rational method of rapidly emptying the uterus, requiring only a brief anesthesia, and being accompanied by comparatively little danger.

2. *Treatment After the Onset of Convulsions.*

The treatment during the convulsions is but a continuation of the old question, whether to immediately empty the uterus or not. The idea seems deeply rooted in the minds of most physicians that the uterus must be emptied at once, at all hazards, and if by good fortune the mother survives, such things as sacrifice of the child, complete rupture of the cervix or perineum, with all the discomfort and permanent invalidism sure to follow, are mere secondary considerations, and the case is considered carried to a successful issue if the mother lives, no matter what her condition may be.

It is not necessary to enumerate the unfortunate accidents which have occurred even with experienced and intelligent operators, but every physician who has tried to rapidly dilate a rigid cervix and deliver an eclamptic patient knows that hemorrhage, extensive lacerations, rupture of the uterus, sepsis and death loom large at that particular time.

Cæsarean section seems to offer the most satisfactory method for rapid delivery, as the entire preparation and operation should not occupy more than twenty minutes, and I have seen such operators as Christafoletti of Vienna complete the operation in from eight to twelve minutes.

Dr. Ferguson of Indianapolis, in a personal letter, writes that he has done this operation twice within the last few weeks and that both the infants are alive and doing well, though one of the mothers died from post-partum hemorrhage two hours after the operation. This is not usual, for as a rule there is little trouble with hemorrhage.

For rapid delivery through the vagina several methods are advised and all are open to criticism, multiple incisions of the cervix, vaginal Cæsarean section, forcible dilatation of the cervix either bimanually or with the Bossi dilator or slow dilatation by the hydrostatic bag.

Unfortunately, convulsions occur most frequently in primiparæ, with narrow vaginæ and before the onset of labor, and any attempt to forcibly dilate the cervix and deliver quickly will almost certainly result in serious damage to the maternal tissues.

All authorities agree that any attempt to forcibly dilate the cervix before obliteration of the internal os is absolutely wrong and that rupture of the uterus is sure to occur. The hydrostatic dilator will usually obliterate the internal os in a few hours, but cases of rupture of the uterus have occurred even with this method.

Multiple incisions of the cervix may extend into rectum, bladder or ureter, while vaginal Cæsarean section has resulted in opening the bladder or peritoneal cavity.

It often becomes necessary to perforate the fetal head in order to accomplish its delivery through the uterine wound in this operation, thus sacrificing the child.

Vaginal Cæsarean section is purely for the expert surgeon and in such hands its expediency is questionable, the operation usually proving a long, bloody and anxious session.

The after-effects have not been reported, but danger of rupture of the uterus, through weakening of the lower segment in the line of incision, cannot be altogether disregarded as a complication in subsequent labors.

Another objection to delivery by these methods lies in the prolonged anesthesia required. Artificial dilatation of the cervix and vaginal Cæsarean section are both lengthy processes and require the application of forceps or version to complete delivery. This means long anesthesia and considerable manipulation.

Latest investigations show that chloroform, that time-honored agent, simply throws fuel on the fire and aggravates the condition.

Forceps and version are rarely necessary, labor as a rule progressing with unusual rapidity in eclampsia and requiring no anesthetic. Jellett advises chloroform when washing out the stomach or during the application of forceps or the performance of version, as the semi-conscious patient is often hard to handle and may injure herself by her struggles. No attempt at rapid delivery is made in his service until the cervix is fully dilated and delivery is thus easily accomplished.

Aside from the question of immediate delivery, treatment must be directed with the object of controlling the convulsions, eliminating the toxins and preventing injuries to mother and child.

Convulsions are controlled by sedatives, toxins eliminated by purgatives and stimulation of the liver, kidneys and skin, and injuries prevented by careful attention.

Castor oil, croton oil, magnesium sulphate, elaterin or any other selected cathartic may be administered, a stomach tube being used to make sure that the dose reaches the stomach, but under no circumstances should any liquid be placed in an unconscious patient's mouth.

The bowels are also stimulated by copious rectal enemata, through a long colon tube, soap and water at first and then saline or sodium bicarbonate solution. This not only washes out the bowel, but stimulates the kidneys by heat directly applied to the kidney region.

The use of saline has been abandoned by many men, as there is probably salt retention in most eclampsia cases, and bicarbonate of soda solution, one dram to the pint, is used.

Hot stupes or linseed poultices over the kidneys are useful.

That there is a general thirstiness of the tissues in eclampsia is rather a contra-indication for hot packs, while the use of pilocarpine is dangerous. The injection of sodium bicarbonate solution under the breasts adds fluid to the system and assists in elimination.

To control the convulsions, three drugs are recommended: veratrum viride, chloral and lastly, morphine.

The dose of veratrum viride is twenty drops of the tincture hypodermically, repeated every half hour in ten drop doses until the pulse is down to sixty, when it is claimed that no convulsions can occur.

Good results are claimed from the administration of chloral hydrate, twenty grains in half a pint of warm milk, per rectum, repeated often enough to keep the patient asleep.

I am well aware that advocating the use of morphine will bring forth a storm of criticism, in spite of the almost magical results obtained from its administration, but it is strongly advised by Osler and it has been demonstrated by Veit of Bonn, LaHarpe, Tweedy and Jellett of Dublin and Herman of London, that since the use of morphine has been introduced, the mortality in eclampsia has been reduced to less than half the mortality of cases treated by any other methods.

Having seen the methods employed at the Rotunda Hospital in Dublin, where the mortality, as already stated, is only about eight per cent. of all cases, and all cases are treated by the conservative method and all receive appreciable doses of morphine, this method of treatment will be taken up at some length in this paper.

It should also be borne in mind that patients are not admitted to the hospital until actually in labor and many of the eclampsia cases have had convulsions previous to their admission. Two cases of this sort which died soon after admission, almost before any treatment was begun, helped to swell the mortality statistics last year.

The eclamptic patient at the Rotunda is entrusted only to some specially trained assistant or member of the staff, competent to perform artificial respiration and to recognize the indications for stimulation or for the use of oxygen inhalations. A tank of oxygen is always kept at the bedside of the patient. No one is better qualified to care for such a case than a well trained anesthetist, for, given an unconscious patient, the two conditions are practically identical.

A patient is brought in unconscious, probably with a history of one or more fits. She is at once put to bed and under chloroform her stomach is thoroughly washed out, till the water returns clear. The chosen cathartic is then introduced through the tube and the tube is withdrawn. Only small amounts of fluid are allowed to remain in the stomach, on account of the pressure of such fluid upon the heart and consequent embarrassment of the circulation.

The bowels are then thoroughly washed out until the water returns clear, and the patient is then placed on her right side, well over to the edge of the bed, practically the same position adopted by most operators for the removal of tonsils. This position in bed not only avoids pressure on the heart, but allows the mucus and other secretions to escape from the mouth.

If respirations cease and the patient become cyanotic, the attendant turns the patient on her abdomen, with head and shoulders over the edge of the bed, face downwards.

As a result of this procedure fluid pours through the mouth and nose and inspiration immediately follows. In some cases it is necessary to perform artificial respiration and administer oxygen. Death of the patient during a convulsion is usually due to the falling back of the tongue or inspiration of some foreign substance as regurgitated stomach contents, as sometimes happens in anesthesia, and should not occur if the attendant is on his guard.

Submammary infusions of sodium bicarbonate solution are administered in the majority of cases, one to three pints of a dram to the pint solution being used.

Morphine is given hypodermatically, one-half grain at the first dose, repeated in one-quarter grain doses every two hours until the fits cease or until a grain has been administered. In some cases it is necessary to continue the administration of the drug, but two grains in twenty-four hours' time should not be exceeded.

In some cases, should the respiration run very low, it is necessary to stimulate with atropine, digitalin or ether injections, and in no case should the respirations be allowed to go below seven to the minute.

Enormous importance is attached to proper action of the bowels, and should the cathartic fail to work in twelve hours, the dose is repeated through the stomach tube and the bowels stimulated with enemata. If the patient is conscious, she is encouraged to drink water, but starvation is rigidly enforced for a considerable period and not until the normal appetite returns, is even milk allowed.

In several cases treated before starvation was enforced, convulsions recurred in periods varying from forty-one to eighty-four hours, and there was marked abdominal distension with large amounts of sour curd in the stomach and bowel washings, though only dilute milk had been allowed.

The best results have been obtained since the danger of giving food has been kept clearly in mind and the practical conclusion arrived at, that a patient may be permitted to abstain from food for days if necessary. Heart failure will more certainly result from toxæmia than from inanition.

No liquid, whether nourishment or medicine, is ever placed in an unconscious patient's mouth. This seems of sufficient importance to justify its repetition.

Recovery has been prompt and satisfactory under this treatment, in the majority of cases recorded. Labor has been allowed to proceed undisturbed, and usually has been rapid and comparatively easy. In a few cases the natural forces have been

assisted by the use of forceps when the cervix was fully dilated, but in the great majority, the uterus was let religiously alone, and labor was never induced.

To sum up in a few words the treatment consists in:

1. Thorough washing out of the stomach and bowels, giving the cathartic through the stomach tube, leaving very little fluid in the stomach.
2. Placing the patient on her right side, head over the edge of the bed.
3. Artificial respiration, inhalation of oxygen or stimulation, if necessary.
4. Submammary infusion of bicarbonate of soda solution.
5. Linseed poultices over the kidneys.
6. Morphine hypodermically in large doses.
7. Starvation.
8. Letting the uterus alone.

A new method of treatment is now being worked out at the Schauta Clinic in Vienna, which consists in supplementing the morphine and chloral treatment with submammary injections of oxygen. They are very reticent about results obtained, as a sufficient number of cases has not been recorded to draw definite conclusions, and of course the honor of publishing results belongs to the investigator, but so far as it was possible to learn, they have treated twenty cases by this method, with prompt relief of the convulsions in sixteen of the cases.

The method is very simple. Sterilize the skin with iodine and pass a sterile needle under one of the breasts. A medium-sized aspirating needle will answer the purpose. The oxygen is then allowed to flow through a sterile tubing until the tissues are emphysematous to quite a marked degree. The needle is then withdrawn and a collodion dressing applied.

There is a perceptible crackling under the skin for several days when pressed upon by the examining finger and this may extend up into the face or over the entire skin of the abdomen, but completely disappears in about a week.

The dose and repetition are left to the discretion of the operator, but the second dose is rarely required. I am unable to go into details as to the principle involved, which will probably be taken up in detail when the results are published officially, but this is a simple procedure which allows the introduction of a large amount of oxygen, which is always indicated in the treatment of eclampsia. It can certainly do no harm and in several cases I have seen very prompt relief of spasm after its use.

My thanks are due to Dr. E. Hastings Tweedy and Dr. Henry Jellett, Past and Present Masters of the Rotunda Hos-

pital, who kindly placed the records of the last eight years of their Mastership at my disposal, also to Professor C. E. Ferguson of the Indiana University School of Medicine, who kindly reviewed and discussed this paper and furnished material, and to Dr. Adam P. Leighton, Jr., of the Schauta clinic, Vienna, for reports and advice.

CANCER RESEARCH.*

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The primary object of this paper is to give a brief review of the most recent developments in the treatment of cancer, and to advance a theory which is already being worked out from a practical standpoint.

I shall classify the methods under three headings, and then discuss them seriatim.

A. *Chemical:*

In this field Prof. Wassermann's chemo-therapeutic experiments with eosin-selenium seem to have met with some success. I quote O. Kiliam: "Eosin-selenium, if rightly constituted, is a red powder, the color being determined by the eosin content. It is easily soluble in cold and even more soluble in warm water. The solution must not only be clear but transparent. One c. c. of a solution 1-400, that is to say, a dose 2.5 mg., injected into a vein of an average mouse of 15 grams, will be tolerated; if more is given the mouse dies either rapidly in convulsions or within the next twenty-four hours."

The injection is made in the following way: "With an extremely fine needle 1 c. c. is injected into the dorsal tail vein of the mouse after the veins have been dilated by a lighted cigar being carried past the tail a number of times. More recently an electric cigar lighter has been substituted for this purpose. Immediately, that is, within half a minute after the injection of the eosin-selenium, the tail, the feet, the ears, the nose, the snout, the eyelids and the entire eye of the mouse become intensely pink. The excretion of the preparation begins very soon after the injection; the principal part seems to be carried off by the fæces, while the excretion through the kidneys stops after about twelve hours, when the urine again resumes its normal color. Most of the mice turn pale again after twenty-four hours, but if an animal remains pinkish and does not speedily return to its natural color, it usually dies; a fact which speaks for the inability of the animal to excrete the preparation properly.

* Read before the Massachusetts Homœopathic Medical Society, April 10, 1912.

"If the mouse overcomes the effect of the injection of 2.5 mg. and if the preparation was a proper one, on continuing the experiment a most remarkable effect is observed. Three injections are made on three consecutive days. After the third injection the tumor is decidedly softened; then with an intermission of one day, a fourth, fifth, up to an eighth injection is made, the number depending somewhat upon the technical difficulties. After the softening of the tumor has begun it begins to feel cystic, and finally an empty bag can be felt between the examining fingers, while the tumor has disappeared.

"If an injected tumor mouse is killed after twenty-four hours, dissection of the animal shows that while the organs present the normal coloring, the tumor itself is intensely red; a proof that the eosin-selenium, which has disappeared from the rest of the body, has been held back by the tumor.

"If the tumor mouse is killed after the third injection, the tumor shows plainly on dissection a softening and decay, until in the later stages one sees at the post-mortem only small debris or granular substance, and finally nothing but scar tissue at the former seat of the tumor.

"If the tumor mouse stands the necessary amount of injection, the tumor has disappeared and the mouse is cured of its tumor. In exceptional cases, when the injections had not been carried far enough, but where the tumor had apparently disappeared, recurrences have taken place, but in all cases where the treament could be carried far enough, the mouse was cured.

"One great danger exists for the injected tumor mouse, even in those cases when the preparation is not too toxic—under which circumstances it will kill the animals from the first to the third day by poisoning; namely, the absorption of the tumor may prove a serious menace to the animal. It is easy to understand that the tremendously rapid absorption of so much pathogenic material must tax the vitality of the animal to the utmost. This is especially the case if the softening and liquefaction of the tumor begin very early, as for instance, after the second injection. But a large number of tumor mice have been cured and have remained free of recurrence for a number of months, through this treatment.

"If chemo-therapy can solve this question at all, this tremendous advance of reaching tumor cells alone selectively should bring us much nearer to its solution.

"If this treatment shall be tried in human cancer, and I have no reason to assume that it will not, the method must be, of course, vastly different. The work of the surgeon will be rather increased, as all operable tumors will have to be extirpated first, and only after the most exact removal of the diseased parts, the chemo-ther-

apeutic treatment could begin to hunt out, select, and destroy those minimal parts of carcinomatous tissue which have evaded the eye of the surgeon or have developed in other parts of the body. It is at once clear that inoperable tumors, for instance, certain intra-abdominal ones, could never be the subject of such a treatment, as the more or less rapid softening would at once produce a perforation, the diseased organ in such a condition not even offering adequate resistance to the intracellular pressure, thus ending the life of the patient abruptly."

B. (1) *Tissue Emulsion:*

The second method as suggested by Gilman and Coca, and carried out by them, is substantially as follows:

The tumors removed at operation were placed at once with aseptic precautions in sterile towels in cold storage for twenty-four hours until partially frozen, when all surrounding fat and fibrous tissue could be more easily cut away; the tumor was then cut into as small pieces as possible with scissors and ground with mortar and pestle for one to two hours, after adding 10 to 30 c. c. of salt solution, depending on the weight of the tumor. If the tumor weighed 5 gm., 10 c. c. of salt solution were added. If it weighed 10 gm., 20 c. c. were added, and so on, so that an emulsion of uniform strength was produced. When thoroughly ground, the emulsion was strained through fine-meshed gauze and put away on the ice in a flask till used.

The technic for inoculation is practically the same as in using the bacterial vaccines. They claim to have gotten results in some of their cases, especially in relieving some of the symptoms and preventing recurrence.

Risley has experimented also with this method. His cases were divided into two classes: (1) Cases of recurrent cancer, operated, and given an emulsion of their own tumor; an autogenous preparation, or vaccine. (2) Cases of inoperable cancer given an emulsion, or in certain instances an extract, made up from a freshly excised cancer from another case; an heterogenous preparation or vaccine. The series is a very small one, the same in number as Gilman's and Coca's, embracing only twenty cases, but the results are strikingly negative with respect to cure and, on the other hand, suggestive of the development of increased activity in the growth of the tumors. In no case in Group I was recurrence prevented, or delayed longer than five months (one case). In certain cases there was no visible effect at all from inoculation, either local or general. In neck and jaw cases such a condition of apparent increased activity of tumor cells was produced that there seemed to be a marked rapidity of growth rather than a retardation. The danger of abscess formation, even with the most care-

fully prepared emulsions, is great, and the danger of serious sepsis always present.

B. (2) In this connection the following may be of interest, involving as it does a commentary upon the general procedure and the part played by the tissue emulsion method.—Werner states that at the Heidelberg Cancer Institute the experiences with two thousand cases of cancer have led to the adoption of the following outline of treatment: A radical operation is the rule whenever possible except for certain forms of sarcomas and epitheliomas which yield to radiotherapy or arsenic. The radical operation is not done with the knife but with the electric needle (de Forest's), especially when conditions interfere with excision far into sound tissue. Equally important is it to keep the wound open so that the Roentgen rays can be effectively applied. Fully 60 or 70 per cent. of all recurrences of cancer occur in the field of operation, and here is where improvement in technic is needed. Active immunization with the patient's own tumor material seems to offer encouraging prospects for warding off metastasis, but further experience is necessary to determine its harmlessness before it can be generally recommended. If a radical operation is not practicable at once, the cancer should be eventrated or exposed in some other way, so that it can be submitted to roentgenotherapy.

C. (1) *Bacterial Vaccine.* (Neoformans.)

This preparation being a suspension of bacteria in normal saline solution, standardized so many million of bacteria in each c. c.

This third type of treatment, as the name indicates, depends upon the use of a preparation of bacteria. In this connection we may consider the work of Potter, whose observations are based upon the use of the vaccines in the twelve following cases: carcinoma of the jaw, 1; carcinoma of the esophagus, 1; carcinoma of the prostate, 1; carcinoma of the uterus, 2; carcinoma of the stomach, 1; carcinoma of the breast, 2; rodent ulcer, 3; sarcoma of the leg, 1; total 12. All were inoperable cases and some of them in advanced stages of the disease. No opsonic index was taken in any of the cases. In three of the patients treated no appreciable effect was noticed, either locally or in the relief of any of the symptoms, and the patients grew steadily worse and finally died. These cases were the carcinoma of the jaw, carcinoma of the esophagus, and the sarcoma of the leg. All were advanced and hopeless cases. In the other nine cases some improvement was soon noticed, in several of the cases even after the first or second injection. The method of administration employed was to give one or two injections either weekly or every three days, depending on the length of time the positive phase lasted. The

initial dose varied from 25 to 100 million micro-organisms and was gradually increased to 200 million when necessary. No other therapeutic measures were used during the course of injections, and the narcotics which all the patients had been receiving in some form or other for some time prior to the injections were stopped abruptly. The most consistent effect of the treatment was the relief of pain. This effect was noticed in a greater or less degree in every case. In one case of cancer of the uterus, pain was relieved after one injection and did not return in spite of the fact that all morphine was discontinued. The general state of health in most of the patients was also much improved. They gained weight, lost their characteristic cachexia and regained their appetite and strength. When the vaccines were discontinued patients became restless, pain returned or increased; they did not sleep, and lost appetite and strength. If the intervals between the administration of the vaccines were prolonged, some of the patients claimed that they could feel the effect of the medicine wear off.

In none of the cases of cancer of the internal organs could any diminution in size or change in the consistency of the cancer mass be noticed, but in the three cases of rodent ulcer the ulcerated area became clean, the tendency to bleeding became less, healthy granulations formed about the border of the wound and the disease seems to be checked. In cancer of the uterus the decrease in the malodorous discharge and the bleeding was marked and lasting. In this series of cases treated by the neoformans vaccine, at least two of the most distressing symptoms of cancer were greatly relieved in the majority of cases; namely, pain and cachexia.

The foregoing represents a limited selection from the more recently proposed methods of cancer treatment. Of the numerous other procedures such as the trypsin treatment (enzyme therapy) very little can be said. Some have failed already to stand the test of further experiment while others, like those discussed above, are still in process of thorough investigation. Still other and different methods are being constantly suggested. In this connection mention may be made of an article by J. Louis Rauschoff, M. D., Cincinnati, who reports a series of experiments to demonstrate the difference, if any, between the blood of normal individuals and those suffering from carcinoma. Guinea pigs were used in this experiment.

There seems to be a possibility of work of this nature opening a channel which may eventually lead to true cancer immunity and treatment by serum.

While the specific purpose of this paper was to consider the treatment of cancer, a few words on the etiology of the condition

may not be out of place. Substantially all of the existing theories assign to cancer an origin which may be classified as (1) Embryonic, (2) Metabolic, (3) Parasitic or Bacteric, or perhaps a combination of some two of them. The numerous researches of the past few years have been productive of many acts which can be reconciled with difficulty or not at all with the first of these theories.

Personally I do not believe we can trace the cause of cancer to bacterial action. While several different forms of bacteria have been isolated from these growths, differing somewhat in general characteristics from other known bacteria, yet nothing definite has been concluded. Their presence may be explained by the fact that conditions are suitable for their multiplication, normal tissue having the power to prevent their growth. No doubt they do play their part, as do many other non-pathogenic bacteria, by becoming pathogenic under certain conditions.

In support of this contention let me cite Professor Blumenthal of the Chemical Department and Department for Cancer Research of the Pathological Institute of Berlin, who has carried out research the results of which have made history. The sound and logical deductions from this work can hardly be questioned. I quote some of his conclusions:

"First: Cancer toxin analogous to bacterial toxin has not been isolated from cancer cells. While the toxin produced is always the same from the same bacteria it is not so with the cancer cells.

"Second: Cachexia is not present if the cancer is walled off, only being present when there is a breaking down or degeneration of the tumor.

"Third: Cachexia is produced by the chemical reactions referable to compounds produced by the tumor; the picture is that of anæmia, many times developing into coma.

"Fourth: Protein metabolism is found to be increased in most instances.

"To summarize: The characteristic cachexia is due, apparently, to the toxic action of the chemical compounds produced by the tumor, not from bacterial toxin."

But let us go deeper into the mysteries of the body. We are composed entirely of cells; these cells vary in different parts, but the combined co-ordination produces the normal harmony of the healthy body. We know that with one exception there is a constant change in cellular formation, new cells being constantly produced, the older cells breaking down to form waste products and as such eliminated. These changes are fairly constant, varying only in degree, during the different stages of life. These stages need hardly be mentioned, for a little thought tells us that the greatest

change takes place in early life, gradually diminishing with advancing years.

Ross has carried out some valuable work upon cell reproduction. He has produced cell division by chemical action outside of the body. He claims that cell proliferation is due chiefly if not entirely to the action of chemical compounds upon the cell body; this may be due to cell death. In middle life there is a greater death of cells, this being in excess of cell production; hence the greater chemical reaction.

Now the exception: We are told that the brain cells remain constant; they increase in action only as they are called upon to perform certain kinds of work; in other words, they are trained to do their work. Co-ordination depends upon nerve force controlled by the nerve centres; this includes cellular activity. We know that carcinoma is the abnormal proliferation of normal cells which must be due to metabolic changes. For this to occur there must be some undue influence upon the nerve centres. The question is: how is this brought about? Before going further into the subject let us consider the time of life that carcinoma most frequently occurs. The percentage is so large during middle life that I feel it is safe to say that it is the time when cellular activity is at its ebb, the beginning of a change. Waste products are not eliminated as readily; hence the theory which I wish to offer. Here I wish to say that chemistry plays an important role. Stockbridge says that life is but a chemical reaction. We have from the very beginning of life chemical as well as physical changes; many chemical compounds are formed which have a marked influence upon metabolism. These, if not properly controlled, act as poisons, their deleterious effect being most marked upon the nerve centres.

In the proposed theory lactic acid and its decomposition products have been considered in relation to carcinoma. These products, as all know, are alcohols, carbon dioxide and carbon monoxide and the lactates. Now perhaps it will be well to mention that lactic acid found in the body is the so-called hydroxy-propprionic acid. It differs from the lactic acid found in milk in that it rotates the plane of polarized light to the right, while lactic acid in sour milk produced by bacterial fermentation is inactive to polarized light as it is the racemic modification. Now, if there be a time in the life cycle when these chemical compounds are not eliminated as fast as produced, but remain in the tissues as poisons, we have as a result the toxic action which is mainly upon the inhibitory centres. The theory that these growths start primarily from injury is generally accepted. The word injury should be thought of in its broadest sense; the filling up of a gland caus-

ing mechanical pressure, the formation of scar tissue, anything, in fact, which tends toward irritation. Wherever there is injury nature rushes to the front; greater cellular production takes place even to the extent of causing pressure, which in turn breaks down the surrounding tissue by affecting the nerve supply, resulting in a greater production of these same chemical compounds which in turn, with the already retained toxins, have a decided action upon the inhibitory centres, leaving nothing to control the cellular production, but instead allowing it to go on faster and faster. The cachexia which accompanies and increases with the growth may possibly be explained by the presence of carbon monoxide which must be constantly on the increase and certainly is a picture of poisoning from this compound due to its union with the hemoglobin destroying its oxygen-carrying power.

Now what would be the result were it possible to so modify the lactic acid of the body as to prevent the production of these compounds? My purpose is to try and work out this theory scientifically, step by step, and I ask your hearty co-operation in this undertaking. I have already made a start, and feel gratified with the results up to the present time.

The preliminary experiments have developed these two facts:

(1) From carcinomatous tissue has been isolated a substance which responds to all the tests for lactic acid.

(2) Similar experiments with substance from benign tumors have given uniformly negative results.

Whether this appearance of lactic acid in the malignant growths is to be regarded as a cause or an effect can only be determined by further and extensive experimentation. If after study and careful research it seems evident that this substance and its decomposition products have no influence on malignant tumors, the negative results will have at least the positive value of eliminating one more possible factor. A careful search of the existing literature seems to show no record of a similar study.

VULVOVAGINITIS IN CHILDREN

By Orren B. Sanders, M. D., Boston, Mass.

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That vulvovaginitis in children is not generally regarded as an affection of much moment is shown by the limited space accorded the subject in medical literature. It would seem as if the majority of physicians who recognize the occurrence of this condition, largely take it for granted that there is no serious side to it, that a few days' treatment will invariably remove all symptoms, and

that disappearance of the discharge must logically be the signal for the disappearance of the doctor and all further thought of the matter.

That this is taking too much for granted, a close study of the facts will readily show, especially if we bear in mind conditions tending to increase the frequency of this affection, particularly in the South.

In the new-born infant it is not at all uncommon to find a discharge from the vagina of an adhesive, mucoid character, a discharge containing epithelial cells and micro-organisms, but non-specific. Notwithstanding the fact that a few days after birth it becomes purulent, ordinary care and cleanliness suffice to keep the parts from showing much inflammation, and they resume their usual appearance in the course of ten days or a fortnight. Epstein maintains that this discharge is physiological and normal, therefore of slight if any importance.

The later appearing common form, although non-gonorrheal in origin, is worthy of more attention than it receives, for two reasons, if no other, namely, because it is often very contagious, and because the discharge is symptomatic primarily of an underlying abnormal constitutional condition. True, there are very many cases due to neglect of the parts involved. In tenement districts, and even to a surprising extent among a large class of people far better off than the so-called poor and ignorant, there is a great lack of real cleanliness, especially with regard to the genital organs.

Other causes of a non-specific vaginal discharge are found in liathisis, constipation, trauma as from attempted rape, worms, adhesions of the clitoris, masturbation, conveyance of infection from others, the presence of foreign bodies in the vagina. These last show a wonderful variety. A specialist in diseases of children has enumerated as among his discoveries, mud, cotton, carpet fuzz, glass, and wood, often discovered in exceedingly narrow vaginæ. To this list may be added peas, beans, buttons, and other small objects, often producing considerable irritation.

The constitutional condition giving rise to a vaginal discharge is one requiring prompt attention and correction, and treatment should be instituted for it as much as for the discharge itself. Jacobi long since pointed out that that predisposition of a structural debility, with chronic inflammation of most tissues, which we conveniently call scrofulous, is responsible for many cases of vulvo-vaginitis in children. Such children when recovering from scarlatina or measles, are especially liable to have a vaginal discharge, dependent upon the general depression of the entire system.

In addition to local treatment, referred to later, methods em-

ployed must include as much of an outdoor life as possible. Often sea air acts as a wonderful tonic, while salt water baths, salt rubs, etc., will prove a harmless stimulant to the vegetative system. Nutrition must be carefully looked after. It is unnecessary to go into this subject in detail, but it should be emphasized that neglect of these cases insures a continuance of the secretion which may last for months.

Again we find a not uncommon cause of inflammation of the vulva and vagina in the presence of the *Oxyuris vermicularis* or well-known pinworm. The intense itching which these worms set up about the rectum, which the child tries to relieve with consequent infection of the fingers, indirectly brings about the transplanting of the eggs to the vagina, even when there is no direct migration of the worms from the anus. It is by no means always easy to get rid of these worms, since they breed in the large intestine, and even high enemata will not invariably reach them. Professor Rotch, of Harvard, mentions cases in which months and even years elapsed before treatment of any kind was successful. In these cases, also, we generally find that lowered vitality which itself predisposes to the invasion of parasites, and to all the multitude of ills which so signally thrive in such a soil. Nothing can be more rational than the growing contention of scientists that, whatever the local condition may be, it must be fought with a keen eye to the initial, individual, fundamental, systematic weakness or defect, whether hereditary, congenital, or acquired. Thus local treatment becomes but a part of our duty as medical advisers. The scope of our work broadens with our ability to grasp it in its entirety, and to act in accordance with our larger knowledge.

In connection with vulvovaginitis from worms, we may get an intense pruritus, erosions of the mucous membrane, frequent micturition, even incontinence of urine, and an inflammation of the urethra similar to that of the vagina. A sequel not to be overlooked is the habit of masturbation, due originally to attempts to relieve the itching and irritation. Treatment of the vaginal discharge must be, of course, combined with persistent war upon the cause of the trouble. If rectal enemata of salt and water are not sufficient to effect a cure, or if salt is irritating, borax and water, a teaspoonful to the pint, may be substituted, followed by half a pint of quinine sulphate solution, 2 grains to 1 pint, or 1 to 10,000 bichloride of mercury. Rotch reports great success in the use of injections of two ounces of olive oil every evening at bedtime, followed in five or six minutes by a large enema of water. Castor oil may be used as a cathartic. When santonin is prescribed, care should be exercised lest too much of the drug be given. For the

vaginal discharge caused by worms, sepia is often the indicated homœopathic remedy.

In vulvovaginitis from other causes, the discharge is usually the first symptom noticed, and in the simple form may be of a serous character, sometimes milky. The color in this affection varies from yellowish-white to green, and in the more severe cases the secretion is thick, purulent, and very fetid, forming yellowish-green crusts on the labia. Microscopical pus cells, bacteria, and diplococci in groups will be found, but the characteristics of gonorrhea will, in non-specific cases, naturally be lacking. The mucous membrane is red, swollen, and edematous, and quite generally involved, while urination is often painful, and there may be considerable burning on micturition. Discomfort and even pain attends locomotion, due in part to excoriation of the thighs. It is of importance to remember that these cases may prove quite obstinate, the discharge persisting, as Koplik has pointed out, even under the most careful treatment, and that this discharge is infectious and communicable. For this reason these cases when neglected are a serious menace to other children both in and out of school, for then the catarrh may last for months, and sometime recur after its cessation. So long as it exists it provides a constant source of possible and easily transmitted disease. Aside from the causes already enumerated, the etiology is unknown, as, in the literature of the subject, reference is made to cases of vulvovaginitis without any appreciable reason for their occurrence.

It is only comparatively recently that the astonishing number of cases, in children, of a true gonorrheal origin, has been recognized. It is interesting to note how widespread the identification is becoming. Dr. J. W. Kerr of Corsicana, Texas, reports that there are frequent cases in the South, of gonorrhea in colored females as well as male children as young as four or five years. This statement is corroborated by other Southern physicians. Rosamond of Memphis, Tenn., avers that practically 95 per cent. of negro women have gonorrhea, giving every opportunity for the contamination of the children they nurse. If to this be added the result of the investigation made by Murrell of Richmond, Va., as to the average age of defloration among negresses of all classes, namely, fifteen years, the outlook is not promising.

Dr. Bogart of Terre Haute, Ind., personally investigated the negro dives in Indianapolis, and found cases of gonorrheal vulvovaginitis in girls seven and eight years of age, while the April, 1911, Bulletin of the Indiana State Board of Health reports two cases of white girls, each eight years of age, and living in different parts of the State, having a gonorrheal vaginal discharge.

An increasingly large proportion of the negro population is moving toward the North, and their commingling with the whites is evidenced by the excess of mulattoes over pure blacks, if in no other way. No dispassionate observer, however, can be unaware of their tendencies sexually. Their lack of sense of moral responsibility in the sexual sphere is well known North as well as South. The admission of colored children to schools for white children is a mistake on hygienic grounds. Whenever there are morally corrupt children, and every large school is apt to have its quota, the tendency has seemingly been toward promiscuous mingling sexually of the two races as among adults.

The matron of a large institution for orphan girls once told me that, let a colored child be introduced, and the small masturbators in the establishment immediately sought her companionship, and that their advances were almost invariably met more than half way. The risk of an epidemic of vulvovaginitis in any institution for children should not be minimized, as infectious diseases gain in virulence under such conditions, the affection, mild in an household, becoming a scourge in an institution.

I have to report six cases of gonorrheal vulvovaginitis in children under six years of age, occurring in my hospital service in the autumn of 1910, five of them derived from a case sent in for treatment of an ischiorectal abscess, discharging thick, greenish-yellow pus, and exhibiting a tender and somewhat reddened area about the anus. Although great care was used in the nursing of this case, infection followed as has been noted, probably through the common use of conveniences. No venereal history had been obtained, and it was impossible to get any light on the subject from the parents. Treatment will be referred to later.

Further testimony is not lacking of the prevalence of this affection. Dr. Robbins of Jamestown, N. Y., at the meeting of the Bureau of Sanitary Science, American Institute of Homœopathy in 1910, mentioned cases which had been under his care of "active, suppurating gonorrhea" in children not more than five years old, and cited instances in New York City where, in more than one instance, a girl of twelve or thirteen years had infected perhaps fifteen or twenty little playmates, the New York data going to show that where one boy having gonorrhea would infect two or three girls, a girl would infect a great number of other girls as well as boys.

The most extensive epidemic of vulvovaginitis is that reported by Skutsch in 1890. This involved 236 school children in Posen, from six to fifteen years of age, who all contracted the disease within fourteen days in a public bathhouse. After twelve weeks

smears from 140 girls showed gonococci still present in 60. Mention might be made of the 86 cases of vaginitis, more than half of them in children under five years of age, identified in a children's clinic in Halle as early as 1883, but it is conditions nearer home and more recent that present the most practical interest.

The excellent records of the Vanderbilt Clinic in New York, furnish convincing evidence of this class of cases. Hamilton in 1910, detailed the treatment of 344 cases of vulvovaginitis occurring during three years. Only 193 of these children were over five years old, and they are worthy of special attention as being of school age, and would, therefore, if freed from medical restraint, have been potential foci of infection. Eighty-six other cases were noted at various times at the Vanderbilt Clinic. Dr. West-Kakels, also, in 1904, reported independently 190 cases coming under his observation.

One of the most interesting and instructive papers on acquired venereal infections in children, is that published in the Johns Hopkins Bulletin in May, 1909. In the course of this paper, which is a study by Dr. Flora Pollack of 187 children treated in the Women's Venereal Department of the Johns Hopkins Hospital Dispensary, Dr. Pollack expresses it as her unqualified opinion that, in the not inconsiderable number of cases in children due to abuse by older persons, the cause of most of these outrages is the widely held superstition that a person infected with either syphilis or gonorrhea may get rid of it by infecting another, especially one heretofore untouched sexually. This infectionist theory seems to Dr. Pollack more tenable than that of perverted sexual instinct, owing, in part, to the appalling number of cases in Baltimore, estimated by the same observer as numbering between eight hundred and a thousand annually. The large colored population there is, of course, a great factor in swelling the number of these cases.

There are many media in the spread of vulvovaginitis. In hospitals, contaminated water closet seats, vessels, wash basins, towels, etc., are the most common. Occasionally the unclean hands of a patient or attendant may convey the infection directly. In other institutions and in private schools, while the same sources may be responsible, still it must be admitted that actual contact through sexual perversities, is a common cause of many epidemics. Among little children out of school or children in the public schools, the physical sexual element is often semi-active. It has been well said that sexual precocity is not a matter of age; there is both a mental and a physical element which varies with the individual, with physique, with opportunities, and with stimuli.

Once the possibility of the spread of venereal diseases by such

media, and especially of vulvovaginitis in children, is recognized, and such recognition substituted for the old vague conception of gonorrheal infection of youth as only a remote contingency, more practical attention will be paid, one would hope, to preventive measures, and among others of prompt investigation of suspected cases, and the adequate treatment of detected cases.

Children are peculiarly susceptible to the gonococcus, because the epithelial covering of the vulva is so much thinner and softer than it becomes later in life. Thus in vulvovaginitis among children of the poorer classes, obliged to sleep in a bed common to most of the family, a specific discharge will develop from contaminated bed clothing, although the women of the family may be free from it, unless they acquire it by direct contact. Dr. Trent of the New York Hospital, in a paper on "Gonococcus Vaginitis in Little Girls," published in the New York Medical Journal in 1906, reporting a number of these cases, mentions that from 50 to 75 per cent. of them were due to active gonorrhea in the father.

The symptoms of gonorrheal vulvovaginitis or urogenital blenorrhea, resemble those of the non-specific form. A diagnosis is only possible by means of a microscopic examination of the discharge, but it has not inaptly been said that every case should be considered guilty until proven by the microscope innocent. Dr. Holt in the American Journal of Obstetrics, April, 1905, records his belief that all cases of vaginal discharge in infants in which many leucocytes are found, should be regarded as suspicious, since in his experience a non-specific purulent vaginitis has been uncommon.

The use of Gram's method will greatly aid in the identification of the gonococcus, as it completely loses the stain. Its coffee-bean form and intra-cellular situation also help to distinguish it from related organisms. In doubtful cases suitable cultural methods conducted by an experienced observer can be resorted to, as all large cities now have expert pathologists. Every physician, however, will find it of the greatest advantage to own a good microscope and know how to use it. Enough elementary knowledge of the bacteriology of common diseases is not difficult to acquire through brief courses such as are arranged for in the pathological department of Boston University School of Medicine or other leading medical schools, and the work is extremely interesting and helpful.

Returning to the symptomatology: it is not infrequently discovered that a slight vaginal discharge of apparently no consequence is of a specific character. In these cases it may be burning micturition which causes the child to call attention to the genitals. Usually, however, the discharge is copious, thick, viscid, greenish-yellow, often foul, and forming crusts on the labia and excoriations

of the thighs. There is edema and reddening of the vulva and urethral orifice, and the vaginal secretion lurking in the folds of the mucous membrane makes effective treatment difficult.

Koplik seems to think that there is often more extension of the inflammation than we are aware of, and emphasizes the "drop of pus on the cervix uteri" only to be seen by speculum, which he apparently finds pretty constant. Hollister, reporting in the Southern California Practitioner, January, 1910, 70 cases of gonorrheal vulvovaginitis in young girls at one of the State Reformatories, notes that in a considerable number of cases in which the vulva and urethra had become perfectly clean both as to discharge and gonococci, gonococci were found in smears from the cervix.

Dr. Hamilton of the Vanderbilt Clinic, has within the last two years made some investigations which would have shown how deeply the gonococcus penetrates in the vaginæ of children. In 40 cases of vulvovaginitis in little girls, he demonstrated in all of them the presence of gonococci in the upper part of the vagina. He did not, however, find infection of the cervix. An interesting fact in connection with his cases, showing the persistence of the disease, was that out of 61 patients who returned to the clinic after periods of from six months to two years, having had no treatment in the interim, owing to the absence of appreciable discharge, the microscope detected gonococci in fourteen of them.

In addition to burning and sometimes painful micturition, inflammation of mucous surfaces, excoriations following the characteristic discharge, there may be slight enlargement and tenderness of the inguinal glands, proceeding even to suppuration, and many complications to be referred to. It has, however, been often remarked that in simple cases of gonorrheal vulvovaginitis, children frequently appear fairly well except for the local conditions. Complications cause a varying rise in the temperature, which otherwise does not go much above normal, seldom, at least, over 101 degrees.

While it is true, as one writer has stated, that "clinically the venereal infections in children run a milder course as regards grave complications, than is the rule in the adult," yet it is equally true that "the number of complications, and the duration of the disease seem almost identical."

A complication much more frequent in young children than in adults or even in older children, is infection of the conjunctivæ. Gonorrheal ophthalmia is greatly to be dreaded, as it may seriously affect the sight. Everyone knows the large proportion of cases of blindness due to ophthalmia neonatorum.

Jacobi asserts that the gonococcus frequently gives rise in the smallest children suffering from vulvovaginitis, to glandular swell-

ings, endometritis, parametritis, salpingitis, oöphoritis, peritonitis, and urethritis, and that these results are liable to be of an enduring character, such is their resistance to treatment. Gonorrheal arthritis must be added to this formidable list, and endocarditis. The writer of today would be rash indeed, who should claim immunity of any tissue from the travelling gonococcus. No assertion is made that the complications named usually occur in children, but I have seen many of them, and they are recorded, as we have seen, by practical men of wide experience.

The treatment of all cases of vulvovaginitis in children, must be intelligent and conscientious. As has already been pointed out, in many of those of non-gonorrheal origin, the disorder is due rather to lowered vitality than to local infection. Such demand much out-door life, and a greatly improved nutrition. In simple cases bathing the genitals two or three times a day with warm water and castile soap, drying with absorbent cotton or gauze, and dusting with boric acid, will suffice locally. The dryer the inflamed surfaces are kept, the better. All discharge must have free exit. Used cotton and gauze must be burned. It is always safe to assume that the secretion is of an infective nature.

Preventive measures form a large part of the treatment of vulvovaginitis, especially when the gonococcus is suspected or has been identified. Urogenital blenorrhea is more often found in hospitals, institutions, and out-patient work than in private practice. Every effort must be made to ensure isolation of the child. Mothers and other attendants must have it impressed upon them that the discharge is highly contagious, that it may be communicated by the hands, by napkins, towels, bedding, toilet articles, drinking cups and other utensils, sponges, syringes, bath tubs, water closet seats, in fact, by any contaminated medium. Affected children in a hospital or institution, besides being kept apart from other children, should have a special nurse relieved from other duties, and the utmost cleanliness be observed. All dressings must be burned; all clothes and bed linen washed separately. Syringes, douche pans, etc., must be sterilized. It has even been urged that every hospital have a detention ward in which newly admitted children can be kept under observation for at least fourteen days to determine if they have any acute infection. Holt recommends the systematic microscopic examination of a smear from the vaginal secretion of every child admitted to a hospital.

Treatment of dispensary cases is often very unsatisfactory, as it is difficult to secure constant attendance or the careful and persistent carrying out of instructions. These should be given in detail as above, and the mother urged to keep the child from touching

the genitals. She should be told that the child must sleep alone. Home treatment may consist of bathing the parts three or four times daily with a solution of boric acid, a teaspoonful to a pint of boiled water, and after drying, applying a boric acid dusting powder.

Many writers are of the opinion that most mothers can give infected children treatment by means of vaginal irrigation, but when this is resorted to the mother should not only be taught by the physician, but also the first few douches given in the home should be administered by a visiting nurse if possible. Experience with the out-patient class teaches that they are very remiss in following any but the simplest instructions. Also more harm than good may result from irrigation owing to carelessness and lack of cleanliness. In private practice one can generally command the services of a trained nurse.

As a wash, bichloride of mercury, 1 to 100,000, will be found very satisfactory. The parts may then be dried, and a 5 per cent. solution of argyrol used, a saturated compress being applied. Children do very much better if kept in bed. For irrigation, either bichloride of mercury or permanganate of potassium, the latter 1 to 5000, twice a day, two quarts at a time, may be given by means of a fountain syringe, and a small rubber or glass catheter introduced with great care into the vagina. Afterwards gauze saturated with a solution of argyrol may be applied. In obstinate and protracted cases vaginal injections of silver nitrate 1 to 5000 or protargol 1 to 20 may be made two or three times a week. Direct treatment of the urethra when involved is not desirable.

Internally aconite may be used in the beginning for the feverishness, restlessness, local sensitiveness and burning; later if there is painful micturition, smarting and tenesmus, cantharis. A thick, greenish-yellow discharge with characteristic concomitant symptoms may call for mercurius corrosivus, while pulsatilla may be found useful for a profuse milky secretion with incontinence of urine.

With regard to the vaccine treatment of the cases of urogenital blenorrhea in children, the consensus of opinion seems to be greatly in favor of it, and very satisfactory results have been observed by a number of investigators, the average length of time of the persistence of the gonococci in the vaginal discharge having been greatly reduced. The limits of this paper, however, do not permit of its discussion.

In the treatment of all cases of specific vulvovaginitis, the secretion must be frequently examined microscopically, say every three or four days, and treatment may be advantageously continued even after no bacteria are found.

Difficult as it is to eradicate the germ in the little individual patient, and to prevent extension of the contagion by her to others, the greatest difficulty of all to be overcome is the stopping of the supply of cases in adults which are so largely the original source of the infection. This is the crux of the situation, and the specialist in venereal diseases can control only a small part of it. Every physician must be both his ally, and an independent worker. More than this, as the problem is one that must be attacked from as many different points as there are intelligent citizens in the community, the need of the necessity for such action must be impressed upon their minds by every means in our power.

Many people who do not seemingly care whether the adult man or woman is a gonorrheic or not, are filled with sympathy and indignation at the thought of child infection. They know it as yet chiefly as dangerous to the eyes. They must learn that the portal of infection in the young may be the same as in the adult, the genital organs; that the complications may be the same, the persistence of the affection protracted indefinitely. Without being alarmists, and while willingly acknowledging the diversity of opinions as to the prevalence of vulvovagnitis in children, we must admit that such cases are in our midst, and that, with the careful diagnostic methods employed today, more cases are being detected. We must admit, also, that a typical case of urogenital blenorrhea has a gravity all its own. And at least we may give respectful consideration to the words of Dr. Keyes of New York, addressed to the New York Academy of Medicine: "Gonorrheal vulvovaginitis in little girls has a horror all its own. The quite inexplicable readiness of infection, the rebelliousness to treatment, the grave and lifelong complications, make it seem one of the cruelest of known maladies."

THE FAITH WITHIN US.*

By Grace Stevens, M. D., Northampton, Mass.

The topic on which our chairman has asked me to write takes me back to the very foundation of things for us as homœopathic physicians. Webster defines faith as "the inward acceptance of a personality as real and trustworthy, of an idea as true and obligatory, or of a thing as beneficial."

Adopting the second part of the definition as best fitted to our use of the word here, let us for a few minutes consider our faith in homœopathy as "the acceptance of an idea as true and obligatory."

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* Read before the Western Massachusetts Homoeopathic Medical Society, December, 1911.

The last word in the definition points clearly to the relation which exists between a real faith and the act of the individual who holds that faith,—the one is the main-spring of the other. And since faith is so important a factor in our daily lives, it behooves us to see how it can best be acquired.

Like greatness—it seems to me—faith may be acquired in one of three ways: one may be born with it, one may achieve it, or one may have it thrust upon him. The first way is by far the easiest,—that is, it requires the least exertion on the part of him who possesses the faith. Taking things for granted without stopping to reason them out is very simple and quite comfortable, so long as nothing comes up to make one think; but unless inborn faith is re-enforced by careful study, we are apt to have some uncomfortable hours when brought face to face with problems and doubts.

Faith thrust upon one does not necessarily mean after the manner of Mohammed and his followers. One may be forced to acknowledge the truth without suffering bodily violence, and those converted half against their wills sometimes become the staunchest believers; but the man whose faith is strongest is he who, like Hahnemann, achieves it, works and studies and experiments for himself, until he knows whereof he speaks, and can give reasons for the confidence he feels. This faith may be severely tried, but it will stand the test. It is an intelligent, not a blind faith, for it is founded on our own experience and on that of others whom we can trust.

Faith may be acquired in this way by anyone who is willing to work for it. "He that willeth—shall know of the doctrine" applies to things physical as well as to things spiritual. But we must *will* to know and will to work for the knowledge. Hahnemann himself says in his introduction to the Organon—"The application of Homœopathic principles appears easy, but it is in reality most difficult and irksome; it demands most careful thought and the utmost patience, but these find their reward in speedy and permanent recovery of the patient."

In leading up to the statement of the principles of Homœopathy Hahnemann gives certain requirements of a physician:—(Organon—paragraphs 3 and 4.) "The physician should distinctly understand the following conditions: What is curable in diseases in general, and in each individual case in particular; that is, he should possess a perfect knowledge of medicinal powers. He should be governed by distinct reasons in order to insure recovery, by adapting what is curative in medicines to what he has recognized as undoubtedly morbid in the patient; that is to say, he should adapt it so that the case is met by a remedy well matched with regard to its

kind of action, its necessary preparation and quantity, and the proper time of its repetition. Finally when the physician knows in each case the obstacles in the way of recovery, and how to remove them, he is prepared to act thoroughly and to the purpose as a true master of the art of healing."

Paragraph 4. "He is at the same time a preserver of health when he knows the causes that disturb health, that produce and maintain disease, and when he knows how to remove them from healthy persons."

This Hahnemann follows with the proof that what is curable in disease—that which demands a curative agent—is the totality of symptoms displayed by the patient. In paragraphs 6 and 7 he says: —"The physician observes deviations from the previous healthy condition of the patient, felt by him and recognized upon him by his attendants and observed upon him by the physician.

"All of these observable signs together represent the disease in its full extent; that is, they constitute together the true and only conceivable form of the disease."

Paragraph 7—"In a disease presenting no manifest exciting or maintaining cause for removal, nothing is to be discovered but symptoms. These alone (with due regard to the possible existence of some miasm, and to accessory circumstances) must constitute the medium through which the disease demands and points out the curative agent. Hence the totality of these symptoms, this outwardly reflected image of the inner nature of the disease, i. e., of the suffering vital force, must be the chief or only means of the disease to make known the remedy necessary for its cure, the only means of determining the selection of the appropriate remedial agent. In short, the totality of the symptoms must be regarded by the physician as the principal and only condition to be recognized and removed by his art in each case of disease, that it may be cured and converted into health."

The second requirement—the knowledge of the curative in drugs,—Hahnemann explains as follows, beginning with paragraph 19: "Now since diseases are definable only as aberrations from the state of health, which declare themselves by symptoms, and since a cure also becomes possible only by changing this aberration of feeling back into the healthy state, we may readily understand how impossible it would be to cure disease by medicines unless these possessed the power of altering the state of health dependent on feelings and functions of the organism. In fact, the curative power of medicines must rest *alone* on their power of altering the unsound condition of the body."

Paragraph 21—"Consequently these morbid disturbances

called forth by drugs in the healthy body must be accepted as the only possible revelation of their inherent curative power. Through them only we are able to discover what capacity of producing disease, and hence, also, what capacity of curing disease is possessed by each individual drug."

As to the relation of remedy and disease, Hahnemann says, paragraph 22—"Thus it follows on the one hand, that drugs become curative remedies capable of obliterating disease only through their power of creating certain disturbances and symptoms; that is, by producing a certain artificial diseased condition, they cancel and exterminate the symptoms already present, i. e., the natural diseased condition which it is intended to cure. It follows, however, on the other hand, that a remedy must be found for the totality of symptoms of the disease to be cured, which remedy is inclined to produce either similar or contrary symptoms according to the dictates of experience, which must prove either similar or contrary drug symptoms to be most serviceable with regard to ease, certainty and permanence in cancelling or converting into health the symptoms of disease."

The treatment of symptoms by contraries Hahnemann declares to be most unsatisfactory—he had had plenty of experience to prove that—and concludes (paragraphs 70-75) : "The only really salutary treatment is that of the homœopathic method according to which the totality of symptoms of a natural disease is combated by a medicine in commensurate dose, capable of creating in the healthy body symptoms most similar to those of the natural disease."

"So much having been proved, there remain," says Hahnemann, "three problems to be solved:

"I. How does the physician gain the knowledge of disease necessary for the purpose of cure?

"II. How does he gain his knowledge of the morbific power of drugs as the implements designed for the cure of natural disease?

"III. How does he apply these artificial, morbific potencies (drugs) most effectively in the cure of diseases?"

I. The first question Hahnemann answers by giving directions for a most thorough examination of a patient, the record of the case to be in writing and to include what the patient says, what his attendants relate, and what the physician observes by means of sight, hearing, and touch. The various symptoms told by the patient must be rendered as exact as possible by careful questioning on the part of the physician. He must try to find out what symptoms are related, and how they are influenced by time, temperature, position or any other circumstance. Any peculiarities of the patient in time of health must also be inquired for, as these may help to decide for or against a remedy.

Question II, "How does the physician gain his knowledge of the morbific power of drugs?", is answered by a careful explanation of the proper method of testing drugs on healthy people. Paragraphs 107 and 108.

107. "If, for the purpose of investigation, drugs are given only to sick persons, and even if these drugs are administered singly and in simple form, little or nothing of a definite kind will be seen of their pure effects because the changes of health which these drugs may actually be expected to produce would be mingled with the symptoms of the natural disease, so as to become obscured and rarely to be distinctly visible.

108. "Hence, there is no other way of obtaining reliable knowledge of the peculiar power by virtue of which drugs affect and alter human health, i. e., there is no other safe or more natural method of accomplishing this object than to administer each drug separately, and in moderate quantity to healthy persons, by way of experiment, in order to discover what changes, symptoms and signs of its effect, that is, what elements of disease each is able to produce, and inclined to excite by itself in the condition of the body and mind."

For the tests made, each medicinal substance must be employed alone, and no other medicinal substance must be taken on the same day. Hahnemann's first experiments were made with crude drugs, but later he found that attenuated doses produced a greater variety of symptoms, and that certain substances which had been considered inert, became markedly medicinal after potentization.

Ordinarily the drug was to be taken once a day in slightly increasing doses until no new symptoms appeared.

That Hahnemann was content with no partial or superficially conducted proving is shown in paragraph 135.

"The totality of all the elements of disease which a drug is capable of producing is brought near perfection only by manifold experiments, instituted by a select variety of individuals of both sexes. We should not consider the proving of a drug as complete, with regard to the morbid conditions it is capable of exciting by means of its peculiar powers of changing the state of health, until all provers after repeated trials, cease to perceive new symptoms from the drug, and until they begin to observe upon themselves most symptoms like those already experienced by others."

The exhaustive proving of Belladonna conducted a few years ago by the O. O. and L. Society under the supervision of Dr. Bellows, served to confirm the work done by Hahnemann and his associates so many years ago. That a remedy should not be given without sufficient cause, or just to please the patient, Hahnemann teaches in paragraph 150—"Whenever a patient complains of only

a few insignificant symptoms of very recent origin, the physician is not to regard them as a disease requiring serious medicinal aid. A slight change of diet and habits of living generally suffices to remove so slight an indisposition." This should be a lesson to some physicians whose only thought is of the indicated remedy, and who bring discredit on our school by carelessness or ignorance of hygiene.

In the following paragraph Hahnemann gives a suggestion that is often most helpful.

Paragraph 151—"But if the symptoms complained of are very severe, though few in number, the physician will on further inquiry generally discover several collateral symptoms of less severity, which serve to complete the picture of the disease."

A case illustrating this point came up in my practice not long ago. The patient, a woman, suddenly developed a very deep, hoarse voice and a painful laryngeal cough. One or two seemingly well indicated remedies were given without benefit, and it was necessary to make a more thorough search for symptoms. Finally the patient confessed to a ravenous appetite for sweets, something for which she did not ordinarily care, and after consulting the repertory, I gave her *china*, which promptly restored her natural voice.

In this case the collateral symptom "of less severity" proved to be one of the peculiar or characteristic symptoms of which Hahnemann speaks in paragraph 153 in continuing directions for the choice of the remedy.

Paragraph 153. "This search for a homœopathic, specific remedy consists in the comparison of the totality of the symptoms of the natural disease with the lists of symptoms of our tested drugs, among which a morbific potency is to be found, corresponding in similitude with the disease to be cured.

"In making this comparison the more prominent, uncommon and peculiar (or characteristic) features of the case are especially and almost exclusively considered and noted; for these, in particular, should bear the closest similitude to the symptoms of the desired medicine, if that is to accomplish the cure. The more general and indefinite symptoms, such as loss of appetite, headache, weakness, restless sleep, distress, etc., unless more clearly defined, deserve but little notiec on account of their vagueness, and also because generalities of their kind are common to every disease and to almost every drug."

Too many of us are apt to fail in carrying out the third requirement—the satisfactory choice of the remedy—because we have failed in the first step, the taking of the case.

If we have mastered the symptoms of the case, subjective and

objective, and have especially noted those which are peculiar or characteristic, the choice of the remedy will be much easier, especially if we are skilled in the use of the repertory.

It is all too easy to fall into the mistake of making a hasty first prescription without taking time to study for the right remedy. If we could but realize the fact, it is much quicker to spend time studying for a first prescription, than to give two or three remedies in succession, and finally have to begin all over again, because none of the medicines were a fit. We have then the added disadvantage of finding the case confused by the former remedies, and the patient most *impatient* because he has not been relieved.

The advantage of using attenuated doses of medicine in making provings has already been spoken of, but Hahnemann gave a farther reason for potentized drugs in the treatment of disease.

Paragraphs 157-59. "Although a homœopathically selected remedy, by virtue of its fitness and minuteness of dose, quietly cancels or extinguishes an analogous disease, without manifesting any of its unhomœopathic symptoms, that is to say, without exciting additional perceptible sensations, it will nevertheless, as a rule (or in the course of a few hours) produce a slight aggravation resembling the original disease so closely that the patient actually considers it as such. Aggravations caused by larger doses may last for several hours, but in reality these are only drug-effects somewhat superior in intensity and very similar to the original disease.

"This slight homœopathic aggravation during the first hours is quite in order, and in case of an acute disease, generally serves as an excellent indication that it will yield to the first dose.

"The drug-disease must naturally be somewhat more intense in order to overcome and extinguish the natural diseases; as it is only by superior intensity that one natural disease can extinguish another of similar nature. The smaller the dose of the homœopathic remedy, so much the smaller and shorter is the apparent aggravation of the disease during the first hours."

Too frequent repetition of even an attenuated drug, is apt to produce an aggravation, the action being cumulative. Each dose of medicine should be allowed to act uninterruptedly, as long as it will, the time of repetition varying with the intensity of the symptoms to be overcome.

In chronic cases, single highly attenuated doses may act for days or even weeks, while in acute attacks, the remedy has usually to be repeated much oftener, every few hours or even minutes.

When a real improvement begins, it is generally much safer to lengthen the time between doses, lest the new dose interfere with the good action of the one before.

These, then, are the articles of our faith as homœopathists:

I. That for which we prescribe is the totality of the symptoms revealed by the patient.

II. The remedy we prescribe is a single drug, which (a) has been tested on healthy human beings, and (b) has produced symptoms corresponding to those of the patient under treatment.

III. The dose prescribed should be sufficiently attenuated not to produce a serious aggravation of symptoms.

This creed of ours demands no apology; rather we should glory in it as containing the principles of really scientific medicine.

In paragraph 273 Hahnemann says: "It is impossible to conceive why there should be the least doubt as to whether it is more natural and rational to prescribe a single well-known medicine at a time for a disease, or to give a mixture composed of several different medicines. Perfectly simple, unmixed and single remedies afford the physician all the advantages he could possibly desire—even in taking it for granted that all simple medicines were completely proved with regard to their pure and peculiar action upon the healthy human body, the physician would abstain from mixing and compounding the drugs, aware that it is impossible to foresee the variety of effects that two or more medicines contained in a mixture might have: or how one might modify and counteract the effect of the other, when introduced into the human body."

The use of untested drugs and of mixtures is being deplored even by some of the old school.

In the journal of the A. M. A. for October 7 there was published a paper read at the meeting in Los Angeles by Dr. Fussell of Philadelphia, setting forth the dangers of prescribing proprietary medicines. He says—"With few exceptions the preparations sent about as samples are mixtures. Now every intelligent physician knows that if our use of drugs is to be of the least value, each prescription used must apply to the case in hand."

Another man in discussing the paper said, "A therapeutic diagnosis should be made with as great care as a pathologic diagnosis."

Hahnemann was many years ahead of his time in his careful examination of the patient and his prescribing for the individual, not the disease. It behooves us as his followers to see that we do not bring discredit on our school by falling away from his teaching and thus falling behind some, at least, of the old school.

Let me conclude with Hahnemann's own words, taken from his introduction to the Organon:—

"Homœopathy is a simple act of healing, unvarying in its principles and in its methods of applying them. The principles upon which it is based, if thoroughly understood, will be found to be per-

fect and unassailable, so that the purity of principles also determines the purity of their application, and they are not disobeyed without sacrificing the honest name of Homœopathy. These principles preclude every departure to the deplorable routine of the Old School, of which Homœopathy is the counterpart and is distinguished from it as day is from night."

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M. D.

Case V.—Diagnosis: Leutic Epilepsy.

It is easy to make this diagnosis with the knowledge of a positive Wassermann blood test. When this fact was plainly stated to the patient, he remembered that he had had a chancre some seven years before, and exhibited the scar. We have seen this test act similarly as a reminder in three other cases recently. A keen observer would doubtless have made a correct diagnosis without such laboratory proof, but on the other hand many would have been content to say off hand—"Oh, it's epilepsy and cannot be cured," and so have given bromide to the detriment of the patient; which again emphasizes the importance of running down every clew in this disease.

Bianchi says of the epileptic form of syphilitic dementia that it may be distinguished from ordinary inherited epilepsy by:

(1) Its late origin, after thirty-six years of life. (2) Its usual commencement in Jacksonian form, and its subsequent complication with other factors. (3) The rapid increase in the number of fits, very soon complicated with paralysis, aphasia, and mental deficiency. (4) The evidence of grave syphilitic affections (pallor, enlarged glands). (5) The efficiency of anti-syphilitic treatment. Our patient had not yet developed the deeper mental picture, but he was thirty-nine years old when he had his first fit. Idiopathic epilepsy usually shows itself in early life and rarely after thirty-five. He had had slight aphasic attacks and slow drawling speech. The attacks began with regularity—in the left forearm and suggested the Jacksonian type of fit. Finally he has not had a fit since he came under observation over two months ago, and though now in other hands we are told that the specific treatment is producing excellent results. In the first of his treatment he was put to bed for over a week and kept on a very simple diet. Small doses of bromide were given, and warm (98 F.) tub baths. For remedies he took at one time Indigo 3x and later Œnanthæ 2x.

As soon as the laboratory revealed the underlying cause, he was put upon mixed treatment, which is gradually getting him

upon his feet. The question of administering "606" has been taken up with one who has had a large experience in its use, and his advice was to give the older and known treatment a trial first, as the results obtained in cerebral cases are not very flattering.

Case VI. C—For Diagnosis.

The patient is a woman aged fifty-nine years, single, Irish-American; she is a seamstress but has been too weak for past year or so to do any work.

Family History.—Mother died of hemorrhage from lungs at sixty-six years and father of apoplexy at seventy-three years of age. There were five children; two are dead, one of apoplexy and one of aneurism of the aorta. Two are well.

The patient was a healthy girl of quiet, easy-going disposition and has had no illness of importance up to three years ago. While in the country at this time, she had a sudden, acute attack of pain in the abdomen, with vomiting. The doctor said she was bilious and attributed the attack to eating too many apples. She has had several similar attacks since. The following winter she broke her wrist by mistaking in the dark the stairs for a door. This was a shock and incapacitated her for work, so that she worried much, became sleepless and talked in her sleep. A year ago she slipped on the floor and broke her ankle, which further upset her. About this time she was looking ill and weak and complained much of her legs being weak and painful; gait became slow and feeble, and she was seen by Dr. E. W. Taylor for a possible oncoming combined sclerosis, with negative result. Then she got much better and was able to do things about the house and go about somewhat. This continued through the past winter.

About five weeks ago, (the middle of April,) she had a weak spell, almost fainted and became jaundiced. From this she gradually improved, but it was thought best for her to have a change and rest and she was sent away. Over these weeks she has steadily lost weight and has had progressing weakness,—had to have help in dressing, had no appetite and periods of nausea and "gone feeling." Bowels constipated. She is sleepy all day, dozing, and at night has nightmare and talks much. Both legs pain her, especially the right. "They twitch and get crampy."

Examination.—A tall, gray woman, feeble and very pale, skin waxy, lemon-yellow, with no suggestion of normal pinkish flush even upon friction. All the deep reflexes are very sluggish but all present. Lungs negative. Heart has systolic blow at the apex, impulse is weak; pulse 110, thin; blood pressure 130. Abdomen is negative except for soreness on deep pressure in the left iliac fossa.

Urine: 24-hour amount, 1000 c. c.; specific gravity 1006;

color, pale straw; albumin, a trace; sugar, absent; urea .8 per cent; indican present; acetone absent; microscope; cells of all kinds, but nothing diagnostic.

Blood: Whites, four thousand; Reds, two million, (estimated) with some megalocytes of oval shape. Hæmaglobin 45 per cent.

What is the diagnosis and from what should it be differentiated?

WHAT CAN PSYCHOLOGY DO FOR DRUG PROVING?

In an interesting little book entitled "The Diseases of Personality" written by the great French psychologist, Ribot, and translated by Dr. P. W. Shedd, the translator interjects frequent notes to show the similarity between certain mental states, which are depicted by the author, and the mind pictures produced by certain drugs. Homœopaths have long known this fact subjectively.

The method of detecting fever by the feel of the pulse and skin, and of heart and lung ailments by pressing the ear to the chest wall, have long since been supplanted by instruments of precision. In fact, almost every rule of thumb which depended for its accuracy upon the acumen and training of the senses of the physician and allowed a wide variation of interpretation according to the personal equation, have given place to methods which admit of common interpretation and verification.

In recent drug proving according to Hahnemann's scheme, instruments of precision have been used as the only common ground upon which opinion could be based and united. To one field alone has such precision and accuracy of observation been denied, and that is in tabulating the effects of drugs upon the mind.

It is true that it is only of late years that we have possessed sufficient studies in the objective evidences of mental states to make such deductions of practical value, and even now there is much to be desired. Especially do we lack trained men capable of conducting such observations. But there are now many methods and instruments of precision which permit of measurements of the mental elements.

Beginning with the senses which are the first registering stations of the objective world, we are able to tabulate with accuracy the reaction time of most of the primary perceptions and to note variations which are produced by medicinal agents. Alcohol has been especially studied in this manner, and its effect upon visual, auditory, tactile, olfactory, heat, cold, pain and temperature sensations have been observed. All this is of course simple and purely objective.

When we step beyond the simpler reflext arcs into the more purely psychic realm, we must still have recourse as far as possible to objective methods, and of these the *association* and *attention* tests are the simplest for getting the true reaction of the higher reflexes.

But another and more difficult question presents itself, for we must in some way get at the effect of our drug upon the emotions, and here we must depend largely upon the introspective records of the subject. To do this work satisfactorily a period of training should be allowed before beginning the proving. The emotions can of course be tested by graphic tracing of the pulse and respiration, and some specially adapted method might be worked out, but it would be necessary to carefully differentiate the physiologic from the psychologic factors in such records. It would be necessary to have the prover's mind thoroughly tested out and its usual variations noted for some time before giving a drug.

The old method of proving was to put down as mind symptoms merely those bits of introspection which the subject reported, without any previous estimate of his type or suggestibility, it would seem apparent that this should be the first factor to determine. If this work were to be done thoroughly, for many provers the time consumed would be very great, but some general standards might be established and allowances made in the final estimate of the proving for individual differences thus determined.

Some one has said that language was given to us to disguise our meanings, and in descriptions of feelings, every physician knows the wide differences in words used by different persons to describe the kind or severity of pain, or other feelings. Whenever such introspection can be assisted by experimental data, it is our duty to use it.

The fact is that persons vary much in the delicacy of their different senses as well as in their range of affective or emotional play, the accuracy of their judgments, power of imagination, tendency to mimicry, sympathy and suggestion, etc., and all of these factors should be determined and considered. It is evident, therefore, that much of accuracy may be obtained regarding the influence of drugs upon both the body and the mind from scientific psychological methods, and such data should form a part of any complete proving.

The splendid psycho-analysis of Theodore Roosevelt by Dr. Morton Prince, in the Boston Sunday Herald for March 24, should be read by all who are interested in the practical application of psychological test methods.

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business, should be sent to the Business Manager, 422 Columbia Road, Dorchester, Boston, Mass.

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ARTHUR H. RING, M.D.

Reports of Societies and Personal Items should be sent in by the 15th of the month previous to the one in which they are to appear. Reprints will be furnished at cost and should be ordered of the Business Manager before the article is published.

CAPITAL PUNISHMENT.

The anti-vivisectionists would much prefer that men and women should hobble through life with one leg or no legs rather than that a few animals should be employed in trying out theories which, if successful, would bring incalculable benefit to human sufferers of all kinds and degrees.

Is there no other way of equally or more satisfactorily testing theories and reaching conclusions? Yes, there is a practical and at the same time a perfectly just way.

The ever recurring question of the right of employing capital punishment demonstrates the unsettled state of mind in which the subject is held. Yet a murderer must not go unpunished, and a sentence of imprisonment for life is too frequently abrogated. Is there no atonement directly beneficial to the living which a murderer can make for the life he has taken? Let us sit down and consider it. He has ruthlessly taken a human life. He cannot give it back if he would. He may repent the rash or contemplated act deeply. To take his life as a forfeit for the crime does not benefit the victim or his friends or even society, further than to act as a deterrent to others. Not infrequently the murderer wants to live in order that he may do something which will in part atone for the awful deed he has committed. Why not give him the opportunity? The nearest a murderer can come to giving back the life he has taken is to give his own life to save others or to restore others hopelessly ill or crippled to a state of health and usefulness. Imagine the state of mind in which a murderer would face death if he knew that by that death hundreds, perhaps thousands of his fellow-men would be saved from untimely death or rescued from hopeless in-

validism. Now, compare that, if you will, to the other state of mind wherein he feels that his death is simply a retaliation for the crime he has committed. In the one he is giving all that a man has to save life and prevent suffering,—a most logical act for one who has wantonly destroyed life and caused suffering. In the other he is having his life taken from him,—a questionable act from the standpoint of higher morals.

There are at the present moment many, many theoretically correct methods of prolonging life, of alleviating suffering, of curing cripples, of reclaiming the insane, of preventing malignant disease, aye, almost of bringing the dead to life, did science but have the opportunity of trying out these theories to their logical conclusions on human beings and not, as now, upon animals.

Many heroes whose memory is unsung and whose names are unblazoned upon tablets, have for the very love of science and their fellow-men voluntarily given their lives that these theories might find full fruition in physical benefit to others. Nor have these sacrifices been in vain, as instances are numerous wherein untold blessings have followed such sacrifices. Was society better served that such heroes as Carroll, Lozier and Reed should give their lives for the discovery of the cause and prevention of yellow-fever than it would have been had the self-confessed murderer Beattie been used as the subject upon whom the experiment was tried? Would Beattie, if given the choice, have hesitated between the electric chair or living in a shack in the fever infested districts of Cuba awaiting the sting of the poisonous mosquito, and if on his deathbed (a natural death and not that of the criminal) had he been told that in his death he had been the means of averting future epidemics of yellow-fever, would he not have felt that he had done something to atone for the murder of his innocent wife?

The State owes it to her citizens that they be guarded from premature death and unnecessary sickness by the employment of every possible means which science can discover;—but shall the State in the pursuance of such discoveries ask her most valuable citizens to voluntarily sacrifice themselves upon the altar of science or shall she surrender the most undesirable citizens, those who have forfeited the right to live and without inflicting unnecessary pain demand that they atone for their crimes by aiding science in saving the lives of others?

To be sure, such a procedure would have to be safeguarded on all sides to the end that only the most approved theories should be investigated and in a manner calling for the minimum amount of suffering. In the event of the criminal surviving the test his sentence could be materially mitigated.

These are practical questions and have an immense bearing

upon the solution of problems which, when solved, mean increased physical efficiency, prolonging the span of life and materially mitigating human suffering.

STERILIZING THE CRIMINAL AND DEFECTIVE.

New York has fallen into line as the sixth State in the Union to make operative a law for preventing the insane, the degenerate, and the habitual criminal from begetting his kind. The law is known as the Indiana plan, as that State was the first to adopt it.

The operation which the law has authorized is known as vasectomy, although it is not, as the name implies, a resection or removal of the vas deferens but rather a ligation of the vas. Under cocaine the vas is exposed on both sides of the scrotum, isolated and ligated at a point between the testicle and the ring. This procedure is supposed to render the subject sterile, but does not unsex him.

The provision of the law which is known as the Bush Bill and which was signed by Governor Dix last month is as follows—

It is framed as an additional section of the Public Health Law and authorizes the Governor to appoint one surgeon, one neurologist and one practitioner of medicine, each to be a man of tried experience, to order and supervise the operations. This board is supposed to study the history of criminals and insane persons confined in the prisons and hospitals of the State. Where it finds that an inmate is an habitual criminal, or is afflicted with an inherited trait of insanity the board has the authority to order that individual to be sterilized, and thus prevented from giving life to children who are bound to be handicapped by their tainted blood. The person into whose condition an inquiry is being made has the right to be represented, and provision is made for a judicial review of the board's decision before the operation can take place.

The experience of those States where such a law is already in force has been very satisfactory. The operation has often improved the general condition of the patient, and is bound to reduce the number of defectives.

One provision of the law reads, "no surgeon performing such an operation under the provisions of this law shall be held to account therefor."

Harold Burbank says—

"For generations nature's laws relative to inherited traits have been studied and utilized in their application to plants and animals. It is time that they were utilized to cleanse the human race of some of its impure traits."

We believe the law is a just one and under careful restrictions will not work an injury to anyone but will result in incalculable

good to society at large. We hope Massachusetts will be the next State to fall in line.

A LITTLE NEARER SPOTLESS TOWN.

This is the era of cleanliness, if not in politics at least in things edible and drinkable. The rhymes of "Spotless Town" have found an answering echo in the heart of every householder. He now knows that it is not only *possible* to live in a state of entire cleanliness but *absolutely essential* to good health and physical efficiency.

If he has been converted to the slogan "no flies, no filth," how can he be satisfied with anything less than pure food and clean milk? But he cannot get clean milk unless there be a compelling force to produce it. It costs an effort to be cleanly, therefore it is cheaper to be filthy. The Ellis Bill is so perfectly fair in its provisions for clean milk that no producer with a modicum of regard for his patron's welfare should oppose it.

The medical profession should exert its united force in an endeavor to secure the passage of the Ellis Bill, as this not only provides for clean milk but places the responsibility of securing such upon the State Board of Health.

NOW FOR THE AMERICAN INSTITUTE.

Every physician who is interested in medicine in general and Homœopathy in particular should attend the meeting of the American Institute of Homœopathy. The session this year promises to be one of unusual interest. The Institute will meet in Pittsburgh, Pa., June 16-21. Special railroad rates have been arranged with a fare of one and three-fifths round trip on the certificate plan.

It is hoped that the New England and New York contingents will so arrange their plans as to travel together from New York City. This can be done by leaving New York on the Pennsylvania R. R., Saturday evening, June 15, at 11:30, arriving in Pittsburgh on Sunday morning at 9:30. The train which leaves Boston at 5:00 P.M. arrives in New York in ample time to catch this 11:30 on the Pennsylvania R.R. A still more attractive trip and one which the majority of members will avail themselves of is to leave New York on Sunday morning by the Pennsylvania R. R., at 10:04, making a day trip over the route showing some of the most beautiful scenery east of the Rockies. This route takes in the great Horseshoe Curve and the attractions of the Juanita River. A train which leaves Boston at one o'clock Sunday morning on the N. Y., N. H. & H. R R. gives one time for breakfast in New York before taking this 10:04 train. Sleepers on this train are ready at 10 P.M.

In purchasing your ticket do not fail to get a certificate which when presented to the Chairman of the Transportation Committee at Pittsburgh entitles you to a return ticket at three-fifths the regular cost.

OUR READING BUREAU.

North American Journal of Homœopathy, May, 1912.

1. *Gastric and Duodenal Ulcer.*—Blackwood, A. L.
   Ulcers of the duodenum are more common than those of the stomach. Multiple, acute, and chronic ulcers may be found in the same subject simultaneously. "While in a condition of health, the mucosa of the stomach and duodenum is protected against the action of the proteolytic ferments which are in the digestive fluids by the anti-enzymes and anti-lysins of the blood serum; yet, in certain cases in which anemia, exhaustion and traumation are leading features, the antibodies have disappeared from the blood, or are reduced, and as a result the pyloric end of the stomach and duodenum are rendered more subject to the action of proteolytic ferments, and ulceration results." Chlorosis and anemia are present. Hyperacidity is favored by a condition of chlorosis and anemia, and this condition in turn favors ulceration. *Pathology, differential diagnosis and complications.* The author's treatment consists in absolute rest for the stomach for one or more days, and milk diluted with an alkaline water. In some cases the author uses buttermilk, kumyss, meat juices, egg albumen or zweibak. Later olive oil or an emulsion of sweet almond oil is added to the diet. Indications for the following drugs are given: Uranium nitrate, Argentum nitricum, Kali bichromicum, Kreosotum, Arsenicum album and Mercurius corrosivus.
2. *Treatment of Puerperal Infections.*—Collyer, A. E.
   The author gives a paper which in some ways is a marked contrast to that of Tarrett's, page 159, 1912, in that the author's 10 years of general practice have not deprived him of that "optimism of youth." The author begins with a prompt and thorough housecleaning, consisting of an intrauterine douche of mercuric iodide, curettage, and a high enema of Epsom salts. This done, he administers a vaccine containing streptococcus, colon bacillus and staphylococcus and aureus and albus. In the meantime the selected remedy is given in high potency, together with anything of value from the eclectic school, and last but not least the triple arsenates on the recommendation of the Abbott Alkaloidal Co.!
3. *Unattacked Communicable Disease.*—Swarts, G. T.
4. *Rural Hygiene.*—Freeman, A. W.
5. *Prophylaxis and Treatment of Furuncles.*—Schall, J. H.
   The author advises against an early incision, but prefers to inject phenol into the centre. An excellent dressing is a saturated solution of normal saline with sodium citrate. Bi-chloride of mercury should never be employed, as it destroys the leukocytes and serum. To prevent the formation of new furuncles the surrounding skin is smeared with benzine.

C. W.

Iowa Homœopathic Journal, May, 1912.

1. *Importance of Uranalysis in Diseases of Children.*—Royal, G.
2. *Diseases and Drugs.*—Hanson, A. S.
3. *Zinc and its Compounds.*—Jacobsen, R. A.
   A brief description of the chemistry and toxicology, together with its old school uses and homœopathic indications.

C. W.

The University Homœopathic Observer, April, 1912.

1. *Blood Pressure in Renal Retinitis.*—Myers, D. W.
2. *Proving of Silicea.*—Mellon, R. R.
   One week of control without the drug followed by a proving covering a period of five weeks with symptoms, uranalyses and blood counts. Low and high potencies.

C. W.

The Pacific Coast Journal of Homœopathy, May, 1912.

1. *Common Salt.*—Cunningham, A. A.

   When sodium chloride in the urine becomes less than one gramme per litre, the patient never recovers unless a normal salt solution is injected in large quantities. Four-fifths of the salt on the Pacific slope is produced from water which is full of sewage. Salt is gathered in the crudest fashion by Asiatics in whom hook-worm is known to exist. Cattle prefer and do better on refined sterilized salt than on the sewage polluted crystals. This may account for some unexplained ills occurring in the far West.

2. *Theory of Temperament and its Relation to Materia Medica.*—Rice, P.

   Most of our students of materia medica simply commit symptoms to memory but know very little about the real science of the subject. The author compares such men to one who simply learns dates in studying history. The entire matter of drug action hinges on the matter of susceptibility, and this is dependent on the organic structure of the individual. In drug proving more attention should be paid to the individuality of the prover. The author cites the immunity to belladonna in one prover who was extremely susceptible to ginseng. The influence of nux and camphor depend on the development of the motor nervous system, but the totality of the symptoms enables us to choose. In the same way "the temperaments which we call chelidonium and sanguinaria temperaments both have well-developed active portal systems and in this sphere are quite similar, but the correlation between the portal system and other systems is not the same, hence the difference in their symptomatologies." If we can once prove that a certain particular morphological combination is always susceptible to the influence of chelidonium, we have created an objective picture of the remedy and we may then state that that person is predisposed to those conditions to which this remedy is the similimum, since the same factors that create susceptibility create predisposition.

3. *Hysteria from the Standpoint of the Gynecologist.*—Ward, F. N.
4. *Prevention of Insanity.*—Jennings, C. C. M.
5. *Obstetrical Cases.*—Evans, M. R.

C. W.

The British Homœopathic Journal, May, 1912.

1. *Some Essential Points in the Homœopathic Treatment of Pulmonary Phthisis.*—Ord, W. T.

   The homœopath knows that although he cannot arrest the ravages of phthisis in its later stages, he can and ought under favorable conditions to be able to cure it by drug treatment alone in the earlier periods of the disease. The importance of striving to prescribe the similimum instead of a similar. The difficulty in reaching the former, owing to the many complications and confusion of symptoms incidental to most cases of phthisis. Prescribing on single particulars only, such as the nature of the cough and expectoration seldom act deeply on the patient's constitution. In attempting to reach a similimum we must take into consideration the constitution of the patient, going well into the previous history, because the morbid symptoms produced by the disease give us no clue to the treatment of the constitutional defect, taint, or diathesis, upon which the malady is grafted. In judging the effect of a selected remedy we must take into account the beneficent action of the regulations as to rest, diet, environment, etc., under which the patient is placed at the same time the medicinal treatment is begun. The author prefers the bovine tuberculin because it is more homœopathic and not isopathic to the disease, but on the whole he does not favor the tuberculin treatment because "judging from the conflicting reports of many observers,

most of whom advocate very different varieties of tuberculin, and also disagree widely as to the doses and methods used, it would seem that no settled plan of successful treatment has yet been evolved." The author uses the 30th potency and higher. A lengthy and interesting discussion follows.

2. *A Few Remarks on Vaccine Therapy.*—Hare, J. G.
   Review of the preparation of vaccines and the opsonic index. The author uses polyvalent vaccines in mixed infections. He considers the following conditions especially suitable to vaccine treatment, excluding the use of tuberculins: (1) staphylococcic infections: acne, boils, carbuncles, and coccogenic sycosis; (2) streptococcic infections: septicæmia, pyæmia and erysipelas; (3) pneumococcic infections: acute pneumonia, empyema, chronic bronchiectasis; (4) chronic gonorrhœal infections.
3. *Analytical Proof of Ionic Medication.*—Hayward, C. W.
   By means of an electric current, zinc electrodes and a two per cent. solution of chloride of zinc the author succeeded in establishing the penetrating power of ions of zinc through healthy skin, fat and superficial fascia, since the underlying glands were found to contain zinc after the experiment. This is apparently another argument like the activity of radium in favor of the action of high dilutions.

C. W.

The Homœopathic World, May, 1912.

1. *The Seventieth Anniversary of the Homœopathic Poliklinik at Leipzig.* Kranz, B.
2. *A Glance Through the Allopathic Materia Medica and Some of the Homœopathy Discovered Therein.*—Wood, F.
3. *Hahnemann's Lesser Writings.*—Mahony, E.
   See review of previous number in the May *Gazette.*

NOTE:—The *Gazette* is glad to see a protest against the articles on Garth Wilkinson, on the ground that they give too great prominence to religious opinions outside the scope of the journal.

C. W.

The Homœopathician, May, 1912.

1. *Temperaments.*—Kent, J. T.
   In this short article the author opposes prescribing according to temperaments. He ignores the constitution of the patient and the diathesis which predisposed the patient to the disease, seeming to base his argument on the fact that temperaments are not caused by provings. "To twist these temperaments into our pathogenesis, symptomatology, or pathology is but a misunderstanding of our homœopathic principles." The reviewer fails to follow the author in his argument.
2. *The Vitalistic vs. the Materialistic Conception of Homœopathy.*—Woodbury, B. C., Jr.
3. *The Chronic Miasms with Relation to Children.*—Blackmore, R.
4. *Constipation, and Comparative Treatment of Both Schools.*—Bloomingston, F. D.

C. W.

Medical Century, May, 1912.

1. *Acute Nephritis in Children.*—Damon, G. H.
2. *Does Encapsulating Diseased Areas Constitute a Cure for Pulmonary Tuberculosis?*—Sheppard, W. A.
   The encapsulation of an area only holds the process in check while favorable conditions exist.
3. *Verified Symptoms of Ammonium Carbonicum.*—Woodbury, B. C., Jr.
   A case of pneumonia with a crisis.

4. *A Physician's Reasons for Having Renounced Vaccination.*—Hodge, J. W.
5. *Eczema—What Is It and What Shall We Do For It?* With a modernized Descriptive List of Clinically Proven Remedies, with Repertory.—Bernstein, R.

   A very elaborate work on the subject which will be appreciated.
6. *Cases From Our Surgical Clinics.*—Forster, W. A.
7. *Practical Notes on Anæsthetics.*—Buchanan, T. D.

C. W.

Cleveland Medical Journal, March, 1912.

1. *The Adrenal Glands.*—Hoskins, R. G., M.D.

   It is assumed that the endosecretion of the adrenals has its immediate action on the muscular structures of the body, and particularly on the involuntary muscle of the blood vessels, intestines and iris. The active principle of the adrenals in such dilution as 1 to 5,000,000 and greater dilutions exerts a readily demonstrable influence on bits of excised intestinal muscle. Splanchnic irritation causes an increase in the quantity of adrenal secretion in the blood. Peritoneal manipulation, as in prolonged abdominal operations, causes hyperepinephrinæmia. Pain and fright act in a like manner. The action of epinephrin on the blood may be a causative factor in altering the blood pressure by direct action on the muscle cells in the vessel wall independent of any nerve action. Fainting and shock are the result of a chemical phenomena and not of direct nervous origin. During periods of special stress there is an augmented secretion of the adrenals, which in part probably augments sympathetic activity and increases muscular efficiency.

H. J. L.

New York State Journal of Medicine, April, 1912.

1. *Intratracheal Insufflation Anesthesia.*—Woolsey, William C., M.D.

   Tracheal insufflation anesthesia in addition to the special requirements of thoracic surgery must measure up to a high ideal of anesthesic efficiency before it can to any extent enter into the field for a frequent administration method. It possesses the advantage of eliminating obstruction to or interference with the breathing airway between the teeth and the bronchi. Collapsed alae nasi, recedent tongue, paralysis, soft palate and glottis, together with hypersecretion of mucous, so often intensely aggravating sequelæ in the usual anesthesia, are done away with. Eliminating improper dosage, danger of abrasion to tracheal and laryngeal structures on inserting or removal of tube or other apparatus, together with the irritation to respiratory mucous membrane surfaces by too concentrated ether vapor, all but one of which exists in the prevailing methods of ether anesthesia and intratracheal insufflation, has every advantage of reasonableness. Adjustment of pressure, warming the ether vapor, never allowing a greater degree of concentration than 10 per cent. of ether, and the attainment of even as high as this degree of saturation gradually, are matters of mechanics and refinement of apparatus. Contrary to the common belief tracheal mucous membrane is adaptable to varied conditions of temperature, trauma and infection. Years of dust inhalation in mines, extremes of climatic temperature, the use of laryngeal intubation in the presence of one of the most severe infections, namely, diphtheria, bronchioscopy, where instrumentation with its attendant trauma is considerable, all disprove the likelihood of immediate injury to the larynx and trachea. Intratracheal anesthesia offers opportunities with perfected apparatus and easily remedied faults in technic for the best available anesthesia in thoracic surgery and eliminates the dangers of respiratory obstruction, and aspiration of mucous, vomitus or septic material.

H. J. L.

BOOK REVIEWS.

Text Book of Ophthalmology in the form of clinical lectures. By Dr. Paul Roemer, Professor of Ophthalmology at Greifswald. Translated by Dr. Matthais Lanckton Foster, Member of the American Ophthalmological Society; Member of the American Academy of Ophthalmology and Oto-Laryngology. With one-hundred and eighty-six illustrations in the text and thirteen colored plates. Volume 1. New York, Rebman Company, 1123 Broadway.

"1. Roemer's work differs from other textbooks in the mode of presentation. The ordinary, familiar language of the clinic has been employed for the most part, instead of the scientific.

2. More space is given to Etiology, and to the differentiation of one Disease from another, to the differential Diagnosis.

3. The applications of the results of the Study of Immunity to Diseases of the Eye, and, indeed, the study of Immunity itself, is developed more thoroughly than in other textbooks. Roemer is well known as an advocate of Immunity.

4. The discussion of disputed points in regard to details of Anatomy, Physiology, Etiology, etc., is more free than in any other book on the Eye. All sides are given candid consideration. Conflicting theories are contrasted. The author's views are given logically and clearly, usually after those held by others have been propounded.

5. The intimate relation of Ophthalmology to Neurology in particular, among various branches of medicine, is given considerable space.

6. Fundamentally, of course, all textbooks on Ophthalmology are alike, i.e., all try to teach how to recognize and treat diseases of the eye. They differ mainly in the language employed, and Roemer has the happy faculty of presenting a clearer picture than others have done. He is painstakingly accurate in demonstrating his points.

7. The time he gives to the manner of dealing with patients, is something that cannot be found in any other textbook on the market."

The above is the publisher's announcement, and is, in the opinion of the reviewer, very well stated.

The detailed instruction in methods of examination is to be commended, especially the use of the Zeiss loupe or the Coddington. This instrument is much neglected in this country and thus important details of cornea and lens overlooked.

The menace of blennorrhea of the sac is forcibly presented and the prophylactic value of extirpation of the sac is strongly urged.

Wassermann reaction is claimed to be demonstrable in 80 to 90 per cent of specific cases.

While the Von Pirquet test is of the utmost diagnostic value in children, it is shown to have only a negative value in adults, who are seldom free from healed foci.

After a somewhat careful discussion the author concludes that tuberculin injections have but slight therapeutic value.

Notwithstanding the author's claim that illustrations fail to give correct information, to the *reader* it is evident that more are desirable.

Volume 1, 275 pages, is devoted to a consideration of Conjunctiva, Cornea, Iris and Lens. Two more volumes are in preparation.

The Care of the Insane, and Hospital Management. By Charles Whitney Page, M.D., Superintendent Connecticut Hospital for the Insane, 1898-1901; Superintendent Danvers State Hospital, Massachusetts, 1888 to 1898 and 1903 to 1910. Member of the American Medico-Psychological Association, The Boston Society of Psychiatry and Neurology, The New England Psychiatric Society, The Massachusetts Medical Society. Published by W. M. Leonard, Boston.

All who know anything of Dr. Page and his great work will welcome this little volume of 155 pages in which he has boiled down the fruits of nearly forty years of experience and keen observation.

Dr. Page is a vigorous exponent of non-restraint in the care and treatment of the insane, and his book is largely an exposition of the means to this end. He is no theorist, but a tried and true general who has proved the practicability of non-restraint in one of the largest and best hospitals for the insane in this state. He writes simply and forcibly, describing the obstacles met by the heads of large hospitals and how they can be surmounted. He touches upon organization, the ideals of the superintendent, the medical staff, the laboratory, the attendants and nurses. The whole book is inspiring and fills one with renewed determination to attain the high ideals set by its wise and kindly author.

Home Hygiene and Prevention of Disease. By Norman E. Ditman, M.D., published by Duffield & Company, New York.

"A medical handbook containing all the information required for ordinary purposes." The book is intended to offer "first aid to the sick." It contains a great deal of very useful information in a compass of 318 pages. The topics are well chosen and arranged alphabetically, which, with aid of a good index, makes ready reference easy. Being intended for the lay reader, technical language is avoided. The kind of information which may prevent illness by sane advice, abounds, and the reader is frequently warned when to call in the doctor. On the whole, it is a book one can recommend to one's families.

To us as homœopaths, however, it has two serious errors. First it fails utterly to offer any of those simple remedies or their indications which we know so well to be of great use as "first aids," and secondly the statement is made that "real homœopathy has proved an utter failure both in practice and theory, and the modern homœopath is a faddist, and if a successful healer, cannot be true to his principles." Even though the writer holds such views, he has been rather tactless in giving them expression in a book which but for it might find place in the hundreds of thousands of homes believing in this "fad."

SOCIETIES.

Massachusetts Homœopathic Medical Society, Boston District.

The regular monthly meeting of the Boston District of the Massachusetts Homœopathic Medical Society was held in the Evans Memorial Building, East Concord Street, on Thursday evening, May 2, at eight o'clock.

In the absence of the Secretary, the reading of the records of the last meeting was omitted. Frederick W. Colburn, M.D., was appointed as secretary pro tem.

Program

A Possible Factor on the Causation of Cancer. Munity and Immunity; Analogous Tumor Growths in the Vegetable World; A Cancer Parasite; Demineralized Food and Cancer, by Horace Packard, M.D.

Discussion by J. P. Sutherland, M.D., and Allan Winter Rowe, S.M., Ph.D.

A Review of The Present Status of Cancer Research, with Remarks upon a New Theory. Howard W. Nowell, M.D.

In the absence of Dr. Packard, his paper was read by Dr. Harry J. Lee.

Dr. Nelson M. Wood presented two interesting cases as follows:

During the last three years it has been my portion to observe and treat six cases of pernicious anemia. Two of them have survived the

disease, and are here tonight. The first one, a woman, was in the Hospital eight weeks, in Dr. Allen's service. She came in very low, with all the symptoms characteristic of the disease. She had a great deal of trouble with the intestinal tract. At times her temperature would go way up—at one time it was 104.8. After two months at the Hospital and Sunny Bank, she came out very much improved, and at the close of this treatment she was able to take arsenic, which she was not able to take before, and improved greatly. The blood count came up very well. In a few months it was practically normal, and has remained so ever since. When she entered the Hospital the red count was 1,500,000. She was in a very extreme condition, and is now practically well.

The other patient, a man, came into the Hospital this Spring. The blood count was 1,800,000. He had practically all the symptoms. Yellow color, troubled with indigestion, etc. Was put to bed on full diet, and began with small doses of arsenic, 3x, and gradually worked up to Fowler's solution, three drops three times a day. Worked up to 15 drops three times a day, and for a time made very rapid progress. At the close of the hospital treatment, had red bone marrow. The arsenicum was discontinued. When we got up to 15 drops, he began to have symptoms of arsenic poisoning. At the present time he says he is perfectly well. The blood count is 5,100,000.

Discussion

Dr. Sutherland.—

"Certainly as an original worker or a research worker I am not at all competent to discuss this question but I am very much interested in what Dr. Packard has to say about the causation of cancer, about munity and immunity, analogous growth in the vegetable world; and demineralization of food. These topics open up a tremendous field for thought and discussion.

I will refer chiefly to what Dr. Packard has to say about demineralization of food and the prevalence of cancer in modern times. It seems to be acknowledged by all that civilized people suffer more from cancer than do uncivilized people, or did our progenitors. What are the real differences between us? Hippocrates said that all men were born with the same mental capacity, but that the differences in men which were discoverable in after life depended on the quantity and quality of the food which they ate. That may be putting it a little strongly, but Hippocrates said it, and there may be some truth in it.

Seneca said that diseases multiply in proportion to the number of cooks;—that is, the more cooks we have, the more diseases we have, and Seneca seems to have been right.

What are the big differences between the early man—the primitive man—and the modern man? Of course we have our flying machines and automobiles, wireless telegraphy, etc. But some of the ancients had things which we have lost. We have lost many things in the arts and sciences, but there are certain things which stand out preëminently, and that have to do with this matter of food. The differences are these: the modern man—I think the American—invented white flour, which has been pointed out by Dr. Packard as a one-sided food, but the wheat contains all sorts of things besides the starchy material which is submitted as white flour. White flour, and the things made of it, enter largely into our diet of today. I am sorry to say that in my travels over the world I have noticed that the use of white flour is spreading. It is not confined to the United States, but peoples who at one time knew nothing of white flour, are today using it in rather large quantities.

The next product to follow white flour was white sugar, that is, the modern granulated, highly polished and bleached stuff that is called granulated sugar. You cannot buy brown sugar today. The refiners tell us it is not fit for anyone to eat, but I have an idea that some of that dirty sugar is better than this refined product of which there is so much used.

We find that in highly civilized communities they average two to three hundred pounds of sugar a year. We can prove this by statistics.

Here are two points along the dietetic line, at all events, which seem to fall into line with the thoughts presented by Dr. Packard. I feel that the demineralization of flour is an unreasonable thing, and, although it may be difficult to prove, I think it is positively injurious to humanity. But I do not agree with Dr. Packard that the demineralization of food has to do particularly with cancer. I do not limit its injurious properties to cancer. Cancer is not the only disease which has increased among civilized people. Insanity has increased, and I know that nervous diseases —neurasthenia in all its many forms—have increased. Why not attribute this increase to demineralization of foods just as much as the increase in cancer?

Another point: not only does the civilized man differ from his progenitors in the use of white flour and in the use of sugar, but I think the modern man eats something that is not good for him, in the form of meat. He is too dependent upon it. It is being claimed by some that the primitive man was a vegetarian, and among some of the earliest known races it is found that some of the sturdiest of the earth lived chiefly on vegetables. We can prove by chemical analysis that in the vegetable kingdom we can get all the starchy food, all the sweet stuff and all the mineral salts that are necessary to make good flesh and give us good health and strength. In regard to meat, which I think is eaten more largely now than ever before, why not attribute to the eating of meat some of the causes of the prevalence of cancer? If you will analyze meat in any of its forms, you will find that it contains a lot of the things referred to by Dr. Nowell in his interesting paper as toxines. The person who eats a lot of animal food is bound to take into the body lots of things which are toxines. If he is unequal to eliminating the toxines, he is going to lay the foundation for all sorts of troubles. I would like to have you think of these things,— that modern man has more cancer, but he also has more of the other diseases; and that the main differences between modern man and his predecessors, perhaps, have to do with his food more than with other things. The chief things in food which are injurious are the introduction of white flour, sugar, and the use of enormous quantities of meat. Two of these things do not contain all that is needed to keep up good health, and the meat does contain a lot of things that are distinctly poisonous."

Adjourned at 10 P.M.

The Connecticut Homœopathic Medical Society.

The sixty-second annual meeting of this Society was held at the Hartford Club, Hartford, on Tuesday May 21. At the business meeting among other things an invitation was received from the Massachusetts Homœopathic Medical Society to hold a meeting of all the New England State Homœopathic Medical Societies some time during September or October of the present year. It was voted to accept the invitation and to take proper means to insure a large attendance.

The business meeting was followed by the address of President Dr. Samuel Worcester. This was an unusual and valuable paper giving the present status of Homœopathy as seen by one who by long years of experience was well able to obtain an extensive view. His address was followed by a paper by Dr. W. H. Watters upon "Phenomena Underlying the Cure of Infectious Diseases." The Society then adjourned for dinner, held in the spacious dining room of the Club.

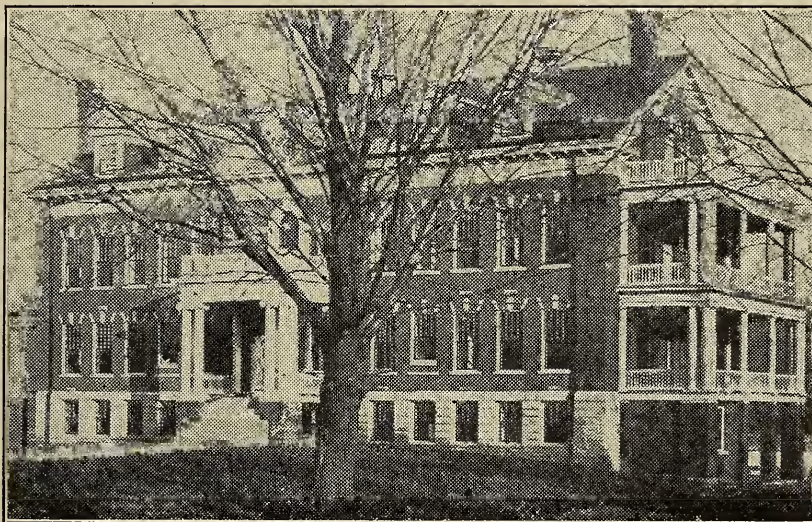
The first paper of the afternoon was a citation of an unusual case of typhoid fever treated by vaccines. This was by Dr. E. S. Smith, and it was followed by "Homœopathic Prescribing" by Dr. Richard Blackmore, two interesting rectal cases by Dr. W. P. Lang, and the "Removal of Tonsils without danger of Hemorrhage" by Dr. E. B. Hooker.

Between forty and fifty members were in attendance and much interest was expressed in the program presented.

THE CYRIL AND JULIA C. JOHNSON MEMORIAL HOSPITAL, STAFFORD SPRINGS, CONN.

The building and dedication of this Memorial Hospital mark an epoch in the lives of Mr. and Mrs. Johnson, the donors, as well as in their native town and in the State of Connecticut. Rarely has any similar benefaction been launched under more auspicious circumstances than this at the dedication exercises, Thursday, February 29, 1912.

Not only has the entire cost of construction, $75,000, been met by the donors, but they have also given $200,000 as a permanent endowment. Much care and thought has been bestowed upon the planning of this perfectly equipped Hospital. The architect, Mr. William D. Johnson, of Hartford, Connecticut, was born in Stafford and received his preliminary



education in the public schools of that town, and many have been consulted regarding the numerous details, so that today the Hospital stands perfect in the arrangement of its inviting wards and private rooms and in its splendid operating rooms and equipment.

The corner stone was laid on June 17, 1911. The address was by Rev. Charles H. Puffer, D.D., of Salem, Mass., a former Stafford boy. It is noteworthy that this event occurred on the anniversary of the Battle of Bunker Hill at which Dr. Joseph Warren fell, for Dr. Warren was interested in the celebrated mineral spring for which Stafford has been noted since it was peopled by the Indians.

The dedicatory exercises were held in the Congregational Church of which Rev. Raymond G. Clapp (a nephew of Dr. Herbert C. Clapp of Boston) is pastor. Dr. G. Percival Bard of Stafford presided at the organ. In introducing the speaker of the day, Rev. J. P. Marvin of Anisquam, Mass., Mr. William Park of the Executive Committee of the Hospital gave an excellent resumé of the history of the inception of this project and a fitting appreciation of Mr. and Mrs. Johnson's interest therein. Mr. Marvin gave an able address on "Human Brotherhood."

The basement of the Hospital contains the receiving and emergency room, nurses' dining room, servants' dining room, kitchen, serving room, laundry, boiler-room, etc. On the first floor are the men's ward, the women's ward, children's ward, reception and recreation room, office, and the matron's room. On the second floor there are six private rooms, a maternity room, operating, etherizing and sterilizing rooms, surgeons' dressing room, and accessories. On the third floor there is one private

room, a guest room and five nurses' rooms, and nurses' reading and recreation room.

Many have responded to the invitation to participate in furnishing the Hospital. The matron's room was furnished by Mr. Walter Sweet of Worcester, in memory of his mother, his aunt, and his uncle, Mr. Smith W. Page. The office was furnished by George L. Dennis of Stafford in memory of his father and mother. The Children's Ward was furnished by Dr. F. P. Batchelder of Boston in memory of his father, Rev. Frederick L. Batchelder, for forty years pastor of the Stafford Baptist Church. The Men's Ward and the Women's Ward were furnished by Mr. and Mrs. Johnson. Private rooms were furnished by Mrs. Jennie H. Fox in memory of her mother, Mrs. Sarah Pinney Hyde; by Mrs. E. C. Pinney, and Mrs. C. B. Pinney in memory of Mrs. Claude H. Pinney; by Mrs. G. H. Baker in memory of her daughter, Ella M. Baker; Mrs. Josiah Converse for her daughter, L. Mabel Converse. In remembrance of Rev. G. V. Maxham, a former pastor of the Stafford Universalist Church, the Y. P. C. U. and Miss Celia Holt have furnished a private room. Mr. and Mrs. William Park furnished another private room, and the Winter Women's Relief Corp the Maternity Room. On the third floor, rooms were furnished by Mr. A. I. Mitchell of the Central Woolen Mill, Harmony Temple of Honor, Red Men, Odd Fellows, and the Wolcott Masonic Lodge. The etherizing, operating, and sterilizing rooms were furnished by members of three wool firms of Boston who have been friends of Mr. Johnson for many years, Brown & Adams; Hollowell, Jones & Donald, and Goodhue, Studley & Emery.

Visitors to the Hospital on dedication day were greeted in the hallway by the sight of a beautiful Seth Thomas clock with cathedral chimes, which was presented that morning to Mr. and Mrs. Johnson by the incorporators and their friends. In the reception room they also found the fine oil portraits of Mr. and Mrs. Johnson, the work of an eminent Boston artist, Mr. Daniel J. Strain. These were the gift of Mr. and Mrs. Frederick Swindells of Rockville, Conn.

Two beds in the Hospital have been endowed, one by Mrs. Jennie H. Fox, the other by Miss Celia Holt.

After being duly incorporated, the Hospital was organized with twenty-two trustees, chiefly residing in or near Stafford. The president is Mr. Cyril Johnson, the donor; secretary and treasurer, Mr. William H. Heald. The executive committee who are to have the immediate management consists of Mr. Freeman F. Patten, formerly Connecticut State treasurer, Mr. William Park, a prominent Stafford manufacturer, and Mr. Frederick G. Sanford, cashier of the First National Bank of Stafford Springs. The Medical Board consists of all physicians in the town: Drs. C. B. Newton (chairman), F. L. Smith, G. P. Bard, James Stretch, and J. P. Hanley (clerk). The Consulting Physicians and Surgeons are Dr. Ralph H. Seelye of Springfield, Mass., and Drs. E. J. McKnight, O. C. Smith, E. T. Smith, P. H. Ingalls, and F. S. Crossfield of Hartford, Conn. Miss Isabelle Wilbur, a graduate of the Rhode Island Hospital and more recently assistant in the Worcester City Hospital, has been selected as matron and superintendent of nurses.

In conclusion, we acknowledge with gratitude our indebtedness to the publisher of "The Press" at Stafford Springs for the cut of the Hospital and numerous data.

Boston University School of Medicine Alumni at the Pittsburgh A. I. H. Meeting.

The Western Pennsylvania Alumni of Boston University School of Medicine are anticipating the coming American Institute meeting in Pittsburgh, June 18, and hope to see many other graduates of the School at the meetings.

Members of the Western Pennsylvania Alumni are Dr. Ella Diamond

Goff, class of 1891, Dr. Roy C. Cooper, 1901, Drs. Susan Abbott-Wooldridge, 1902, and Frederick V. Wooldridge, 1903, Drs. Ward I. Pierce, 1904, and Lydia Baker-Pierce, 1906. Dr. and Mrs. Cooper are in Vienna, where the doctor is taking post-graduate nose and throat work, but all the other members are in Pittsburgh and want to hear from everyone who is to attend the Institute. The Pittsburgh Miessen is planning many pleasant entertainments for the wives of the visiting physicians, so we hope that you will not leave "her" behind, fearing that she will be lonely while you are busy at the meetings.

Susan E. Abbott-Wooldridge, M.D., Sec'y.

Alpha Sigma Fraternity.

Members of Alpha Sigma Fraternity in attendance at the meeting of the American Institute of Homœopathy at Pittsburgh, June 16-22, will hold their annual Institute reünion. Our alumni residing at Pittsburgh are providing for the reception and entertainment of the brothers. Fraternity headquarters have been reserved at the Hotel Shenley. Members are urged to register at once upon their arrival, that they may receive full information as to the program provided.

These yearly fraternity meetings afford some of the most enjoyable and memorable events in our Fraternity life. To the active chapter members they give the opportunity of coming into close fraternal associations with many of the most prominent men in our profession; and an opportunity is given to the alumni to renew more closely their old fraternal associations and to keep in touch with the fraternity's progress. Several of the grand officers are always in attendance, and a short business session is held for discussion of matters pertaining to the fraternity's welfare.

Should any additional inducement be necessary to decide one upon attending this meeting of the American Institute, surely this notice to Alpha Sigma men is all that is necessary.

Dana F. Downing, M.D.
Grand President.

Wm. H. Price, M.D.
Grand Secretary.

PERSONAL AND NEWS ITEMS.

Dr. Alfred M. Duffield, class of 1885, B. U. S. M., has removed from Citronelle, Alabama, to Huntsville in the same State. Dr. Duffield is secretary of the Alabama Homœopathic Medical Society.

Dr. Henry Nowmisky, class of 1909, B. U. S. M., has changed his name to Norman and is located at 20 Lawrence Avenue, Roxbury, Mass.

Dr. Jacob Nowmisky, B. U. S. M., 1911, after a few months' service in the Massachusetts Homœopathic Hospital, has joined a Russian Jewish colony in Metoule, near Beyruth, Syria, and is said to be enjoying a good practice there, not only amongst his own countrymen but also with Mohammedans.

Dr. Herbert F. Gammons, class of 1909, has left the Rutland State Sanatorium and has begun practice in Brockton, Mass. The vacancy caused by this change has been filled by Dr. Willard B. Howes, a graduate of the class of 1912, B. U. S. M.

Dr. Harriet J. Lawrence, of the graduating class of 1912, B. U. S. M., has accepted appointment at the New England Hospital for Women and Children, Roxbury.

Dr. George E. Boynton, class of 1909, B. U. S. M., now located in Mt. Vernon, Washington, was married on May 16 to Miss Elsie Leona Siemons, of Bellingham, Washington.

The formal exercises of the Valedictory and Faculty Reception to the graduating class of 1912, Boston University School of Medicine, were

held in the auditorium of the Evans Memorial, East Concord Street, on which occasion Dr. Nelson M. Wood made the address for the Faculty, and the class was represented by Miss Marion Shepard of Buffalo, New York, valedictorian. Forrest Jay Drury, of East Haverhill, New Hampshire, was the class historian and prophet.

Following these exercises the purely social features of the evening were held in the School building, as formerly.

Miss Shepard, the valedictorian, received the degree of Doctor of Medicine cum laude, at Commencement exercises on June 5, her rank for the four years being exceptionally high.

Dr. Katharine French, B. U. S. M., 1910, is house physician at the Haynes Memorial (West Department Mass. Homœopathic Hospital), Brighton.

Dr. Elizabeth Wiltshire Wright, class of 1909, B. U. S. M., has removed to Radford Street, corner Cliff Avenue, Yonkers, New York.

Dr. Henry W. Johnson, class of 1888, B. U. S. M., formerly located at Berlin, New Hampshire, is now in practice in Knoxville, Tennessee, and specializing in ophthalmology.

Dr. L. A. Frazier has removed from Amsterdam, New York, to Mechanicsville, New York.

The *Gazette* extends its sympathy to Dr. James Fryer Cooper, of Falmouth, Massachusetts, in the death of his wife, which occurred on May 21. Dr. Cooper is one of the younger graduates of Boston University School of Medicine (class of 1910), and in the sudden death of Mrs. Cooper he has lost a devoted wife and helpmeet.

For Sale.—An old established practice in a southwestern New York village of fifteen hundred inhabitants. Present owner will sell office furniture, library, instruments, etc., at nominal price. No charge for the practice. Apply to H. J. W., care of New England Medical Gazette, 422 Columbia Road, Boston, Mass.

Dr. F. D. Worcester, of Keene, New Hampshire, will receive into his home patients suffering from neurasthenia, melancholia or mild mental diseases, or convalescents. Number limited to five.

Dr. Harry W. McElman, class of 1910, B. U. S. M., has accepted appointment at the Styles Sanitarium, New Britain, Connecticut.

Dr. Herbert W. Hoyt of Rochester, New York, has removed his office to 174 East Avenue (opposite William St.)

Cards are out for the marriage on June seventeen of Dr. Bertha L. Cameron (B. U. S. M. 1911) of Manchester, New Hampshire, to Mr. Chester Guild, Jr., formerly of Boston, now of Manchester.

RUSSIAN HOSPITALS.

"Nursing Times" is our authority for certain statements concerning the present status of Russian hospitals and the treatment of nurses.

"Russian hospitals seem to need drastic measures of reform, according to the report of a municipal committee of inspection. The Peter-Paul Hospital in St. Petersburg has room for about 600 patients, but takes as many as 1,400, the majority finding accommodation on the floor. The wards are very dirty, and in many places the walls are so damp that they are covered with mildew, while the baths are indescribable. Operating room and mortuary are only separated by a thin partition. It is not surprising to hear that the nurses' quarters are in a wooden building, formerly used as a stable, and in such a dilapidated condition that it threatens to fall in at any moment."

THE USE OF LANE PLATES.

So many very enthusiastic reports have recently been given out concerning the advantages of using the Lane plates in surgery, that the following taken from an editorial in the New York State Journal of Medicine is timely:

"Under the leadership of Arbuthnot Lane of London it has become fashionable in many quarters to treat simple fractures by the open method. Perhaps every one who is now advocating the use of the Lane plate does not go to the extremes of the inventor and make use of it in every case, nevertheless its use is far too common. It seems such a simple proceeding to cut down on a fracture, put the two fragments in cabinetmaker's apposition, bore the necessary holes in the bone, put the plate in position, screw it home and close the wound. It sounds easy. It often is easy, more often quite difficult and involves much disturbance of the soft parts, especially in a deep lying bone like the femur. In fact, the application of a Lane plate to a fractured femur may be most difficult; usually is."

VACCINE THERAPY.

An article by Barker in the New England Medical Monthly thus summarizes his personal experience with vaccines.

"Without going into too great detail, it is almost universally admitted that

1. Carbuncles do better with vaccination than with cruciform incision and packing, though not better than with early complete excision.
2. That certain cases of acne when treated for a long time with autogenous vaccines, especially if acne bacilli are added to the staphylococci, may be cured, while other and precisely similar cases cannot.
3. That furunculosis is as variable as acne.
4. That acute streptococcus lesions with lymphangitis, the "blood-poisoning" of the laity, are not affected by vaccines.
5. That otitis media, especially that seen in scarlet fever, is often greatly helped in the acute and sub-acute stages, so that the use of vaccines in hospitals for the exanthemata is likely to become general. Also that an occasional case of chronic otitis media of long standing and not affected by other treatment, has been cleared up by vaccination.
6. That the genito-urinary infections, non-gonorrhœal, the majority of which are due to the colon bacillus, show great amelioration of the symptoms without, in most cases, any change in the number or variety of the bacteria in the secretions.
7. That pyorrhœa alveolaris can be cured almost always by vaccination.
8. That Ross can reduce the fever and severity of erysipelas, but that other experimenters are unable consistently to repeat his results."

HOMŒOPATHIC SYMPTOMATOLOGY.

Dr. W. A. Siebert has recently contributed an article to the North American Journal of Homœopathy upon the "Authentication of the Homœopathic Symptoms." This is so compact that abstract cannot be made from it without repeating the entire article. One paragraph is, however, taken as somewhat indicative of the context.

"Unfortunately, our symptomatology is interwoven with a confusing complication that also is sadly in need of the touch of science. I refer to the co-ordination or ranking of the symptoms. Symptoms prominently or repeatedly observed in provers may properly be classified accordingly. This classification may not be satisfactory to the laboratory, where another and different classification may be framed. Again, these distinctions would not be at all satisfactory to the clinicians, whose classification would be entirely at variance. And so on. These facts suggest still another homœopathic labor, and the authentication of the homœopathic symptom will be necessary to its successful performance."

CLINICAL RESEARCH IN MEDICINE.

Barker of Johns Hopkins has recently contributed a valuable paper upon "Some Tendencies in Medical Education" to the American Medical Journal. In speaking of the advantages and needs of clinical research he says: "In order that clinical research may make more rapid advance, and the sciences of diagnosis and therapy be furthered, the experimental method should be more extensively employed. Owing to the peculiar conditions which have prevailed in the clinics up to now, only a few men, either in Germany or the United States, have had the time, interest, training and independent income which have permitted them to do extensive original work by experimental methods in laboratories directly attached to the clinics. Recently, however, more of this work has been done. It has been very welcome, and the time has come when it would seem desirable to make this kind of research more systematic and purposeful, less casual and accidental. Each medical clinic, in addition to its laboratory in which undergraduate students are taught, and in addition to the small laboratories connected with the wards in which routine microscopic, bacteriological, chemical, radiographic and electric examinations are made on patients or on materials derived from the wards, should have three or four special clinical laboratories expressly designed for scientific investigative work for solving problems in diagnosis and therapy, which contact with the patients in the clinic suggests. In the biochemical laboratory of the medical clinic the methods of modern chemistry may be applied to the solution of clinical problems, especially those of metabolism. In the biologic (serologic) laboratory the problems of infection, immunity and experimental therapy may be approached. The physiologic division of the laboratory may carry on experiments bearing on cardio-vascular, renal and other diseases. If a fourth, psycho-pathologic, laboratory be available, all the better. In these laboratories for medical research there should be medical investigators, especially trained in the so-called pure sciences of physics, chemistry and biology, who will devote themselves to the application of the methods and principles of these sciences to the solution of the special problems by which workers in the clinic are confronted. These men should be paid liberally enough to permit them to devote their whole time and energies to research, the rewards of their positions being regularly enhanced during their productive years."

COMPETITION IN MEDICINE.

"We are living in an intensely practical age. Whoever delivers the goods will get the business. Whoever emphasizes his business, by out and out

advertising, or by the mere claim of a special system, has an advantage over the man who unobtrusively follows the code of ethics, in a modest manner. The medical profession must do two things to regain its popular prestige: It must frankly acknowledge and adopt certain valuable ideas, including that of elaborate equipment, to be found in some phases of irregular practice; and it must cast off the last vestige of reverence for forms and customs in favor of practical utility. By this last statement, we do not mean that the individual practitioner should become a quack, but that the profession as a whole should put and keep before the laity, its superiority over partially trained, one-sided charlatans. Also we mean that both in professional societies and literature, and in the every-day work of the practitioner, more attention must be paid to actual cure, and, cure being impossible, to actual though palliative relief." —Medical Times.

EXPERIENCE WITH SALVARSAN.

Dr. C. M. Whitney, Professor of Genito-Urinary Diseases, Tuft's College Medical School, has recently summarized his experiences with the use of Salvarsan. In short they are as follows:

"The effects produced by this now famous preparation have been variable and not as magical as the early, glowing reports abroad would lead us to expect. In early cases the chance has rapidly disappeared and in late cases some of the cutaneous manifestations healed with considerable rapidity and broke down again with equal rapidity in a few weeks. In one case of marked mucous patches upon the tongue, which had existed for six months, where we would naturally expect brilliant results, total failure resulted despite the fact that the remedy was given intravenously for its rapid effects.

In other cases of mucous patches upon the lips and tongue epidermization has been rapid. In a tertiary cutaneous lesion upon the face and lips, in a case of seventeen years duration, rapid improvement was noted in four days, but did not progress after the tenth day, yet the gain has been held for two months. An ulcer of the lip from a gumma in a case of seven years duration healed in ten days after an intramuscular injection.

Contrary to our expectations we have seen the best results where the treatment was given intramuscularly. Arsenic has been recovered from the urine twenty-four hours after this method has been used.

Until we know more about the ultimate results which may be expected after Salvarsan has been given we would advise the patients to continue the use of mercurials and iodide even if the Wassermann is negative. Until the lapse of sufficient time to judge of how frequent relapses are in the early cases so treated, it seems wise to restrict its use to cases which do not react the ordinary treatment, to the tertiary cases and to those rare cases of malignant syphilis.

It is not a treatment to use in all cases indiscriminately."—American Journal of Dermatology and Genito-Urinary Diseases.

SIMPLE DIET.

In an encyclopedia published in 1835, there is an article on temperance, in which article it is stated that in India some British officers were captured, imprisoned and kept on cold water and rice solely. Many of the officers went into the dungeon with diseased livers and other complaints; when they were released, after several years' confinement, they were in perfect health, and on returning to the army found themselves high in rank through the death of the officers who had been their superiors, but who had meanwhile lived freely and drank wine and spirits.—The Dietetic and Hygienic Gazette.

The new journal "Successful Medicine," has recently started a symposium upon "Why the remuneration of the average physician is so

low." Several answers to this question have been received, all of which are interesting. Montgomery of Philadelphia advises several procedures. These are:—

"1. Render bills for services monthly and place the estimate for the services not on the number of visits rendered, but on the responsibility of the case, and the ability of the person to pay.

"2. A proper appreciation of the value of organization, through which:

(a) Proper remuneration must be demanded for services to corporations, such as Boards of Health, schools, police work, mining companies and insurance and railroad organizations. Much of this work is preventative medicine and the people should be taught to appreciate the importance of paying to avoid ill health.

(b) The limitation of charity in our hospitals and eleemosynary institutions to those deserving of charity. Not sufficient care is now exercised to prevent people perfectly well able to pay for service from securing it for nothing, thus doing themselves a moral injury and depriving some medical man from just remuneration.

Only through proper education and systematic consideration of his interests, with the determination that his services shall command remuneration, can the physician hope to better his position."

Dyer of New Orleans says: "I can read the horoscope of medical practice in this country and can see the time ahead when the practice of medicine will be controlled and administered by the state. The only exceptions to such a practice being men who are either employed by the state as specialists or who are allowed to practice as such because of their unquestioned ability in a particular field. This must come about for the protection of the weaklings not able to take care of the business side of the practice of medicine and with such a desirable administration there will be no longer the evils of medical practice which now arise from the enforced necessity of the 'sauve qui peut.'"

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ORIGINAL COMMUNICATIONS.

HAY FEVER.*

By George B. Rice, M. D.

The term "hay fever" has been used to express a variety of conditions having their origin in a hypersensitiveness of the intra-nasal and bronchial and mucosa. These have been variously designated by the terms vaso-motor rhinitis, hyperesthetic rhinitis, nervous catarrh, rose cold, pollen fever, horse fever, and so forth.

Most authorities divide the disease into two forms, viz: the periodic, and the chronic, the first being applied to the abnormal state of body and mucous membranes whereby paroxysms of sneezing, coryza, lachrymation, itching, and nasal obstruction are excited by certain pollens or odors which pervade the atmosphere at definite periods of the year, and the second designates a certain state of nasal irritation, excited by a large variety of conditions, such as dampness, east winds, any kind of dust, and by odors of animals, smoke, etc. Some patients present one idiosyncrasy, and some another.

From the early study of the disease until the present time much confusion has existed regarding its etiology, hence a variety of theories have been advanced, each writer striving to make his conception of the disease fit the various manifestations.

The first observations on the subject of any note were made by Bosworth in 1819. It was not until 1873, however, that a detailed and scientific study of this affection was attempted, and what interests us particularly is that these studies were made by Dr. C. H. Blackly, an English homœopathic physician. Dr. Blackly's book met with such universal favor and praise from the medical profession that a second edition was published in 1880.

It was this authority who called attention to the fact that numerous pollens were in a large number of cases the exciting cause

* Prepared for Clinical Week, Boston University School of Medicine, June 6, 1912.

of the nasal hyperesthesia, and that there exists in susceptible individuals an underlying constitutional dyscrasia. In his introduction to the second edition Blackly says: "Though bearing somewhat on the germ theory, the facts I shall have to detail in the following pages do not help much to settle any of the vexed questions on the subject. These facts will, however, show that, in some cases at least, the disease, without being contagious, is in some instances the result of the operation of two principal factors, one of these factors being the condition of the animal body which permits the development of disease in it; the other, the action of some agent external to the body, and which exhibits its power whenever a sufficient quantity of it comes into contact with the susceptible organism. The first condition, though often varying, is probably always present in a greater or smaller degree even in the most healthy subject. The second, in like manner, is probably as variable as the first, and though possibly always present in the larger centres of civilization, is ever changing in its quantity or its power."

In 1876 Beard of New York wrote a monograph in which he called attention to the nervous temperament of hay fever sufferers, and that the exciting agents were very varied, and not confined to the pollens of plants and flowers.

In 1882 Daily of Pittsburgh published a paper in which he attributed the recurring attacks to "local chronic disease upon which the exciting cause acts with effect."

In 1883 Roe of Rochester stated that hyperesthesia is associated with, or occasioned by a diseased condition, either latent or active, of the naso-pharyngeal mucous-membrane.

In 1884 J. N. MacKenzie of Baltimore suggested the term "coryza vaso-motoria periodica," on the ground that the disease is essentially a coryza, showing in most cases a decided tendency to periodic recurrences, and dependent upon some functional disarrangement of the nerve centers as its prevailing cause.

In 1885 Sajous published a small book entitled "Hay Fever and Its Successful Treatment," in which he teaches, 1. "That as a result of heredity or of diseases implicating markedly the nervous system, the nerve centres became abnormally sensitive, and are, therefore, inordinately influenced by the external elements to which they are naturally susceptible.

"2. That, as a result of local disease, the portions of the nasal mucous membrane over which the branches of the spheno-palatine ganglion and those of the nasal branches of the ophthalmic nerves are distributed become hyperesthetic, and capable of acting as media for the transmission of impressions made upon their surface to the nerve centres.

"3. That when these two conditions co-exist and when the external elements to which the nerve centres are inordinately sensitive are present in the atmosphere, a paroxysm termed 'hay fever' is excited.

"4. That the paroxysm cannot take place unless the inodinate susceptibility of the nerve centres, the intra-nasal hyperesthesia and the external irritating cause are present simultaneously.

"5. That since one of the necessary elements, the external irritating cause, is only present at a certain time each year, the paroxysm can only occur at a certain time.

"6. That as a consequence of the above, elimination of one of the three elements necessary to the production of a paraxysm will prevent its occurrence."

At this same period Bosworth wrote: "That owing to a condition of nasal obstruction, there arose a diminution of the atmospheric pressure in the nasal cavity, and a consequent dilatation of the blood-vessels," and this in Bosworth's opinion was the underlying cause of the malady.

Later Bosworth modified his views and says: "The neurotic habit is an essential element in the causation of hay fever, and serves to explain why certain individuals are sensitive to the external exciting agent, and others not." And again Bosworth says: "a local morbid condition of the nasal mucous membrane as a predisposing cause is present in probably all cases." Dr. Bosworth further writes of the psychical influence which may be present in certain individuals as an additional causative factor.

In 1895 and 1896 a number of writers, including Bishop of Chicago, suggested that hay fever was a local manifestation of what Haig of London has called "uricacidemia."

But one of the most notable articles on the subject was written in 1903 by Dunbar of Hamburg, Germany. This article was the outcome of years of searching for the active irritating principle of pollens. Dunbar succeeded in isolating a toxic albuminous substance which in susceptible subjects was capable of causing attacks of hay fever. From this he made a serum which he called "Pollantin."

In 1910 Young of Edinburgh published a book on hay fever in which he called attention to the sensitiveness of a certain structure on the septum which he calls the "septal tubercle." This is a small triangular prominence exactly opposite the anterior portion of the inferior turbinated body. The removal of this, and of the inferior turbinated body, in Young's opinion, gives much relief, and in certain cases is followed by a permanent cure.

Should I attempt to give a complete resumé of the literature

on this subject until the present time I should more than consume the hour allotted me.

I have in my collection of monographs something like thirty devoted to this disease, besides numerous books on diseases of the nose and throat, about as many more, in which are one or more chapters treating of the subject.

My task must be to try to give as faithfully as I can the consensus of opinion regarding the nature and character of the affection, and to try to outline a plan of treatment which will, in a fair proportion of cases, bring beneficial results.

(To be continued)

HOMŒOPATHY AND THE ADVANCE OF MODERN MEDICINE. *

By Scott C. Runnels, M. D., Indianapolis.

In this era of change, of the ever new, when the morning paper announces that Prof. Brown of Smith University has just discovered a new cure for pneumonia, by which the death rate is reduced fifteen per cent; and the avid public having hardly digested this startling news is greeted with the claim that Dr. Jones has advanced a treatment for rheumatism by which ninety-six per cent are cured, or that Prof. Blank has annihilated the social plague, and so forth and so forth, it is only the nimble of mind who can even keep the main body of the advancing army of the Protectors of the Health in sight, to say nothing of its outriders. While it must be admitted that much of this widely heralded and recently conquered territory is found to be still insurgent, yet even the most skeptical are certain that at the present time great advances have been made in the fight against disease and that the individual's chances of health are today greater than ever before.

To this restless mind of "Modern Medicine" the homœopath is a back number. Because he has been practicing medicine along the same lines for a much longer period of time than any other system, or lack of system of practice, the plea is that "science" has advanced and left him hopelessly stranded. Is this contention just? Is the follower of Hahnemann being left on the bank while the river of knowledge flows past, because he does not evidence the turbulence and activity through which much of this later wisdom has come?

In order to decide this question let us look over the recently

*Read at the Indiana Institute of Homœopathy May 21, 1912.

acquired territory. Medical advance has been made in four lines: 1st, Sanitation; 2nd, Immunization; 3rd, Therapeutics; and 4th, Chemotherapy.

First. Sanitation is not in any sense "medicine" and has only a secondary relation to the healing art. It is merely the application of common sense amplified, and as such every worker for health, physician of whatever sect, or layman, uses every safeguard in his power, both for the protection of the individual and of the community. The work of sanitation is of untold importance; the conquest of Cuba and the digging of the Panama Canal were the conquest of the test tube rather than of the battle ship or the steam shovel, and the reduction of the death rate all over the civilized world is almost entirely to its credit. Prevention is better than cure, but because we are able to prevent a disease we should not claim that we can cure it; the two are absolutely different. Sanitation is entirely without the ranks of sectarian medicine; Hahnemann was one of its pioneers, and his followers hold many of its highest offices today, while there are eminent sanitarians who are not doctors at all.

Second. Immunization, which is entirely the development of the last twenty-five years, the child of the laboratory and the pride of its parents, is the real advance which medicine has made. A number of diseases which for all time had held undisputed sway over the human race are being subjugated. The entire field of bacteriological infections bids fair to surrender, and more recently the trympanosomes, and we hope the plasmodia, are coming to be classed as processes against which we hope to have efficient specific agents. The millenium has by no means arrived, but the doctor can at last point with justifiable pride to several diseases and say this and this and this I can cure, within limits.

While the inception and development of this advance has been in no way the work of the homœopath, yet this new method is but a different application of the old homœopathic law, the more confirmatory because discovered independently. Immunization work is of two kinds, the active and the passive. The active, in which the effect is produced by the action of small, regulated doses of the identical disease toxin, or one as nearly identical as can be approximated, on the animal to be protected, causing him to produce a reaction to the poison, is merely a more exact adaptation of similia. The discussion as to whether it is idiopathy or homœopathy is more or less beside the point, to my mind, for even though a culture be used which has been taken directly from the infected person, the therapeutic toxin is not identical with the pathogenetic. The treatment to which it is subjected, growth upon an artificial media, means used to kill,

the preservative, all have their effect upon the germ, changing it more or less according to the technic. As an instance of this we know that in many of the chronic infections, where a more delicate immunity is necessary, the ordinary preparation of vaccines by heat and phenol derivatives is often useless; while more accurate methods not only cause a discontinuance of the infection but will also remove pre-existing and often apparently unrelated symptoms. Just as one may find several remedies that seem indicated in a certain case; the indications which differentiate the proper remedy from those which would not produce cure are often very minute, but we have all had experience with the difference. Further we find that the germ is constantly changing in the infected person and that in order to obtain results we must use as similar a toxin as possible, i. e., one that has been taken recently so as not to allow the germ still resident in the person time to alter its front. We must change our ideas about immunization work. It is not a universal specific for any disease that, given the name, can be bought by the quart and dealt out indiscriminately to all persons afflicted, but instead is a delicate and an exact method as is the old law of Hahnemann, of which it is the latest version.

I find myself dropping more and more into the well tried homœopathic methods with my vaccines and as I do so I get better and better results and see more and more similarity in the action. The oral route is used almost to the exclusion of the hypodermic, not only because of its greater safety and simplicity of technic, but also on account of the more exact immunization possible and the avoidance of the sudden swamping of the system with toxin inseparable from the shot gun method. In very acute cases, where vaccines by any of the customary methods are impossible, a small dose of the oral preparation is placed in a glass of water and a teaspoonful every hour or two brings a rapid response. The method of preparation of vaccines will also sound familiar to any homœopath. Instead of the tedious process of killing the germ by heat, a very delicate and unsatisfactory means, as too much heat destroys the toxin and too little does not kill the germ, and instead of the questionable use of some derivative of carbolic acid as a preservative, the oral vaccine after it has been emulsified and standardized is simply diluted with alcohol and each dose placed in a separate container, when it is ready for use in a few hours. The method is simple. Anybody with enough bacteriological skill to grow a culture can use it, but the regulation of the dose requires as much experience as the running of an automobile, for great damage may be done, especially in acute cases, by too heavy a dose. There is no exact means of de-

termining the proper dose for a given case, and each person responds best only to the right touch; clinical experience, the "feel" of the case is the only determinant I know, and to one without homœopathic experience the clinical regulation of vaccine dosage is a trackless jungle.

Passive immunization, the antitoxin, has never had an analogue in medical history, but the protection which is stolen from one animal for the benefit of another is produced by the same method and answers to the same law as all other curative processes.

Third. The advance in therapeutics in recent years has been great. The synthetic chemist is constantly turning out a mass of new "drugs," some of which we hope will prove to be of value. The homœopath may be remiss in not paying more attention to these discoveries, but I am inclined to think that it is wiser to wait until their value has been determined and then to scientifically "prove" the useful ones, especially as there are already efficient agents covering much of the same ground.

Among the better prescribers of the other schools the dosage is becoming smaller and smaller, even infinitesimal, and the number of drugs in a prescription is growing less and less. This is certainly not unhomœopathic.

Many of the so called "new" drugs are old friends to some of us. I was amused a few years ago when Yohimbin was placed upon the market; after reading the first announcement of it with the account of how it had just been discovered in Africa, etc., I turned to my old copy of Boericke and read a more complete account of its action than the journal just read contained.

While I had known of the widespread imitation of other schools I was astonished recently to find how much homœopathic practice had crept into Hare, Wood and Cushney; bichloride of mercury 1-10 grain in a glass of water, one teaspoonful every hour for diarrhœa; ipecac in vomiting; glonoine in headache; gelsemium in grippe; aconite and bryonia in infinitesimal dose; etc., etc.

It is interesting to note in the Deutsche medizinische Wochenschrift for January 4, 1912, that Schilling advocates the use of tartar emetic in the preparation of the antigen in immunization against the trympanosomes. Aside from the mere mordant action of the drug he claims that "specific assistance is rendered." From what I know of sleeping sickness I should say that tartar emetic was a good homœopathic prescription.

Fourth. Last year Prof. Ehrlich set the world by the ears in promulgating a new system of cure. Chemical compounds are to be constructed that have a high specificity, being exceedingly

toxic for one organism and much less so for others. Experience is as yet too limited to pass any adequate judgment, but while the one compound as yet produced has homœopathic justification, arsenic being a time honored remedy for certain types of syphilis, it can not be said that Ehrlich's theory can be in any wise justified by the homœopathic law.

In conclusion it may seem to many who have had experience with the law of drug action that it is unnecessary to bolster it up or attempt to vindicate it. Very true. Homœopathy can stand for itself, and will. But it is certainly refreshing to one who is much in the minority to find that the majority, who claim to be vastly superior, are in almost every line of their advance following in our footsteps.

Truth is eternal. She may change the cut of her skirt, or the color of her hair, or her name even, but to one who has known her intimately she is always the same.

ORGANIZATION AS A FACTOR IN MEDICAL EFFICIENCY.*

By Frank M. Patch, M.D., Framingham, Mass.

The year 1912 will long stand as one of the principal milestones in the history of organized Homœopathy in Massachusetts. Meeting today, as we have done, in the beautiful new building so recently added to the Concord Street group, the present becomes a fitting time to recall briefly the various steps that have made possible such an undertaking as the erection and endowment of the Evans Memorial and to suggest possible lines of even further development which seem now to be opening before us. Especially should we take this opportunity to express as a body our great appreciation of and indebtedness to the men who have worked so zealously for the accomplishment of this project. As an educational asset its probable value to our branch of the medical profession in New England can hardly be over estimated at the present time.

Our past successes are prone to invite dreams of the future, and it is from these visions that we must distil our achievements in the coming period of growth now awaiting us. It matters little, it seems to me, whether we think of ourselves as physicians purely and simply, legitimate members of the great body of practitioners of State and Nation, or as homœopaths, a distinct and equally legitimate branch of that great body. Physicians we are

* Presidential Address delivered at meeting of Massachusetts Homœopathic Medical Society, April 10, 1912.

and homœopaths I trust we are proud to be, for is not a homœopathic physician one who adds to his knowledge of general medicine a special knowledge of homœopathic therapeutics? For the sake of clarity then and not on account of any foolish sectarianism, let us, for the moment, think of ourselves as a body of homœopathic physicians having in Massachusetts a certain organization, the gradual accumulation of time, originating in the beginning through the necessity for self protection, continuing in more recent years by means of natural cohesion on account of community of interest among those within its ranks.

The Massachusetts Homœopathic Medical Society was organized in 1840, seventy-two years ago. Comparative harmony has marked its growth. It now has a membership of over four hundred and fifty, covering all parts of the State and including a large majority of the leading men and women of our school in this Commonwealth. As a latent power for good this body represents a compact portion of what should be a most efficient machine not only in the interest of its members but for the welfare of the State itself in matters pertaining to the conservation of health. An effort has been made in the past two years, as you know, to so amend our by-laws as to bring about a greater degree of unification in our body throughout the State as a whole. It is too early yet to forecast the exact result of this organization, but it seems fair to expect a beneficent outcome provided members will patiently co-operate in an endeavor to perfect the plan as now undertaken.

The object of these changes is solely in the interest of compactness and efficiency. The society aims to reach and include in its membership every homœopathic physician in good standing within the State. In its turn it desires to extend to every member sympathy and protection in time of need and all the advantages of organized medicine as represented by its discussions, its publications and its institutions. It is not easy for the society to accomplish this duty in as complete a manner as is desirable for the reason that physicians as a body are often indifferent to the advantages of organization. They are, if worthy, men whose whole attention is absorbed by the demands of the hour. They have few opportunities to cultivate society affiliations and no time which they are free to call their own. Consequently it is true that many of our most desirable adherents can seldom be with us. Again, the besetting sin of many physicians is indifference to public duty. They are modest, they feel that their only forte is in the healing of the sick, *in the sick room*. They overlook, mistakenly in the opinion of many, the equally important duty of observing the symptoms of the body politic that they may aid in applying

corrective influence through organized medicine where it can accomplish most for the welfare of our people as a whole. In other words, the community needs our services as well as the individual, and in-so-far as we accept this larger responsibility shall we become broader men and women and more useful as physicians to the patients whom we serve. Consequently, if every member feels bound through loyalty to his State Society to use his influence with every neighbor practitioner in good standing who is unaffiliated, and with every worthy young graduate, to join his district society, we shall soon include all desirable practitioners of the State on our rolls.

Thus we secure the elements of efficiency through organization, the opportunity for the many to act as one; the elimination of wasted effort; the advantages of co-operation; the opportunity of moulding and concentrating public opinion and of accomplishing the larger ends for which we may strive from time to time through the overwhelming power of amalgamated effort. These are some of the advantages of organization as a means toward efficiency. An effective machine is not necessarily a corrupt machine; indeed some of the best examples of organized efficiency in the world are devoted wholly to beneficent ends. In fact, the time has come when practically the only means by which we may hope to accomplish any large purpose, is through close, effective organization, and the time was never more appropriate for emphasis to be placed on this fact as an important element in our future progress. We need have no dread of machine rule. Our system of rotation of officers is simple and has worked out well in practice.

We desire only to be a power for good and to accomplish in the large what will best redound to the welfare of our patients individually, for, after all, our ultimate purpose is simply "to restore the sick to health." In the accomplishment of this end may we not look upon the State Medical Society as a body wherein our ideals are germinated? It is here that the best individual thought of our members is brought for elaboration and discussion, to stand or fall before the final judgment of the whole body.

The dissemination of such truth as we are entrusted with is accomplished in two ways, First, through the individual activity of members in their respective communities, applying from day to day the scientific knowledge they have gained; Second, though perhaps most effectively, through means of what we may be allowed to designate as the executive branch of our organization, —the homœopathic institutions of Massachusetts.

We may justly look with pride on these splendid accomplish-

ments in our midst, all indirectly, the outgrowth of activity on the part of our State Society. We may admire them, not because they are under homœopathic management, but for the larger reason that they are well equipped institutions doing a noble work in the cause of humanity and worthy of comparison with other similar institutions wherever located or by whomsoever conducted.

In observing the present tendencies of society it is not difficult to see that organization in all branches of the world's work is coming to play a more and more important part as the years pass. Wise foresight and long headed judgment on the part of past members of this Society, largely through an effective use of the possibilities of co-operation and organization, have given us the position we hold today in Massachusetts. It is on account of this fact and, furthermore, that being in the minority among physicians of the State it behooves us to make up for what we lack in numbers by a correspondingly higher degree of co-operation; therefore it may not be amiss at this annual gathering to bring forward possible suggestions looking toward an even greater efficiency than we already enjoy.

Our parent institution, the Massachusetts Homœopathic Hospital, was organized in 1855 and opened to the public, with sixteen beds, in 1871. It has now grown beyond all expectation of the founders, caring last year for over twenty thousand patients. It is made up of the following departments: the main hospital on East Concord Street with medical, surgical, maternity and children's departments; the John C. Haynes Memorial at Brighton, for contagious diseases, with its one hundred beds; the Out-Patient Department on Harrison Avenue, caring for between eleven and twelve thousand patients annually; the Convalescent Home at Watertown, and , finally, the Evans Memorial for Clinical Research and Preventive Medicine.

Truly we have here a splendid example of what organized co-operation has done for Homœopathy in Massachusetts. It may well inspire us with enthusiasm for the future.

In addition to the above we have in the State under our administration an Insane Hospital of which we are justly proud, a position in the Sanatorium at Rutland, a small group of municipal hospitals wholly or in part under homœopathic management, and a number of private institutions.

In close affiliation with the above we have the educational department as represented by the Boston University School of Medicine. On this it is not my purpose to dwell, as it would lead to matters irrelevant to the present discussion. I am sure you will all agree with me when I say that the only reason for the existence of organized Homœopathy in Massachusetts is for the

purpose of affording the very best of modern facilities for the care, in illness, of such part of the public as may desire homœopathic treatment; incidentally, offering to our members the means of performing the best service of which they are capable in the interest of these patients. Such being the fact we should make it our object to provide the means of carrying out this program to its fullest extent. In other words, no patient desiring our services should present himself at our doors in vain. Yet in spite of the splendid showing already made our organization is not complete. There are still one or two important gaps to be closed; consequently we are unable to accomplish our fullest duty toward the public and thereby are somewhat less efficient than we should be.

If we may judge by the light of past history this will not long be the case. A group of men and women who have "made good," as have the homœopaths of Massachusetts, will soon see to it, I trust, that no avenue is left unguarded, that every sufferer who so elects may be received and cared for in our own buildings and by our own physicians.

In my estimation, the most evident hiatus in our organization today is the pressing need of proper hospital facilities for psychopathic cases, neurotic sufferers and border-line mental difficulties. We are obliged at present either to turn such cases over to our friends of the opposite school; send them to some private institution, or commit them to Westborough. Neither our members nor the patients themselves are satisfied with the first course, and in the majority of instances the second choice is entirely out of the question on account of the necessarily prohibitive expense. As for the third possibility, only a small percentage of the cases are receivable at an insane hospital even if it were desirable to send them there, which it is not. Neither patient nor physician will take such a step until every other alternative has been exhausted. We are in dire need of an observation pavilion, situated outside the city, where such cases can be cared for under the best modern conditions, the more severe being sent on to Westborough when it becomes evident that such a course is wise, others being cared for till convalescent, for charges corresponding to their financial ability. Such an institution would be able to perform a wonderfully helpful service in our midst. New York has been provided for in the opening of the Neurological Institute on 67th Street. Our old school friends in Boston are soon to have a Psychopathic Hospital added to the Fenway group. For many years they have already had the Adams Nervine at Jamaica Plain, performing a limited part of this service in a most admirable manner. They are always kind in welcoming our patients,

but I am one of those who believe that we should do this work ourselves. We have the men and the means; homœopathic therapy is especially adapted to this class of cases. Our results have always compared favorably with those of others, consequently, if we are to keep abreast of the times, we *must* have facilities for this branch of our growing need. It would seem that this work might best be organized as a department of the Massachusetts Homœopathic Hospital much after the plan of the Haynes Memorial. It is to be hoped that means to carry out such a plan may be forthcoming from some kind donor in the near future.

A second opportunity for the furtherance of our aims should be added to the many activities of our parent institution toward which we look for a standard of worth. This is organized social service under the auspices of the out-patient department much after the plan followed at the Massachusetts General Hospital.

Our out-patient department reaches a great number of poor people. It would seem as though their welfare could be enhanced and the work of our physicians and students amplified to a considerable degree by the development of some such plan as is here merely suggested.

The time has come when we must do something more than prescribe drugs for our patients. The physician of today has achieved remarkable opportunities for community service. His office is social and educational no less than medical. He neglects the highest side of his calling if he fails to take a leading place in educating and uplifting society both individually and collectively. He may at times even usurp the domain of the clergyman. The physician, moreover, should be a natural leader in organizing the great forces of preventive medicine and welfare work.

He should call to his assistance the splendid help of social workers in the same spirit that he has taken advantage of the service of trained nurses, that of harmonious and needful cooperation. Our trained nurses are largely individual assistants. The social workers are community helpers as well as educators.

Physicians, social workers, and trained nurses are natural copartners performing in the twentieth century the identical service that Christ instructed his disciples in doing at the beginning of the present era. The greater complications of city life in recent years have made necessary all these added forces. We must adopt them and use them wisely if we expect to hold our position in the forefront of the State forces for good.

The State Sanitorium at Rutland. Present conditions there are not satisfactory to the members of this Society. This

is not intended to be in any way a reflection on the management of Rutland, for as far as the writer is aware, there is no criticism to be made. The reason for such a statement arises solely from the belief that we shall never be able to express ourselves satisfactorily in the State care of tuberculous patients until we have an institution wholly under our own management, where we can command a high class man from our own ranks to fill the position of Superintendent and where we may have an opportunity to educate other efficient young men in the various minor positions to become leaders in this branch of medicine. We should not rest until the Legislature of the State is brought to see this matter in a fair and just light: They will grant it, as they have always granted our just demands in the past, as soon as we show ourselves sufficiently in earnest in the matter to command their undivided attention.

THE EVANS MEMORIAL. Just one thought in relation to our most recent acquisition, which, as yet, has hardly had opportunity to get out of its swaddling clothes and into the race for supremacy in public service. It is a hope that, by some means, through the machinery which it will develop, opportunity may be found for the appointment of a salaried official whose duty shall be the compilation, study and interpretation of the records of our various Massachusetts institutions preliminary to a greater degree of cooperation and the gradual development of a body of statistical knowledge that may prove of the greatest possible value not only in upholding the supremacy of the homœopathic principle but in furthering humanitarian welfare at the same time, for if our principles are sound we should give them the fullest publicity and disseminate such knowledge as we have where most needed.

HIGH FREQUENCY CURRENTS IN GENERAL PRACTICE. *

BY L. A. BROWN, M. D., Portland, Maine.

Although in a paper of this scope one can hope to do no more than scratch the surface of the rich field of possibilities spread out before him, yet such earnest cultivation as can be done in general practice may be made to yield results satisfactory and beneficial to doctor and patient alike.

Since the discovery of high frequency currents in 1890 and 1891 by Morton and Tesla, an immense amount of research work

* Read before the Cumberland and York County (Maine) Homœopathic Medical Society.

has been carried on to discover their uses, not only electrically, but therapeutically, to mankind, and although the limits of their usefulness are still constantly extending, we are now able, with the devices at our hand, to definitely relieve many of the ills of man that have heretofore defied utterly or responded indifferently to the doctors' best efforts.

In order better to understand the application of the high frequency current in disease, let us consider briefly, first: What it is. Second: How it is applied. Third: What its main physiological effects are.

FIRST: WHAT IS IT?

It is an alternating induced current of high voltage, small amperage, and exceedingly rapid oscillations, 10,000 to 1,000,000 per second. According to the method by which it is generated, the current is called Morton, D'Arsonval, Tesla, or Oudin current. The foundation of these methods is practically that each uses the disruptive discharge of a condenser to produce vibration or the "to and fro" movement of the current. This current may be taken directly from a static machine, or passed through an induction apparatus in circuit either with a static machine or x-ray coil.

SECOND: APPLICATION OF THE HIGH FREQUENCY CURRENT

(a) The direct method, by means of electrodes connected to the ends of the spiral.

(b) Auto-conduction. In this method the patient does not in any way touch a conductor. The high frequency current traverses a spiral and thus inductively influences the patient. To show that we have currents of great magnitude, we need but to have the patient illuminate an incandescent lamp by holding it between his hands.

(c) Auto-condensation. In this method the patient lies on a cushion usually formed of a felt mattress four or five inches thick and containing no metal. The cushion rests on a couch on which is placed a metal sheet, connected to one end of the spiral. The patient lies upon the cushion and so is near the plate but does not touch it. The other end of the spiral is connected to the patient's hands by means of a bifurcated metal electrode.

The effects of auto-conduction are practically the same as those of auto-condensation.

WHAT ARE THE PHYSIOLOGICAL EFFECTS OF HIGH FREQUENCY CURRENTS?

Professor D'Arsonval taught us nearly all we know of the effects on the human body of high frequency currents. He gives the following actions:

An entire absence of effect upon the general sensation and upon muscular contractility.

A marked influence upon the vaso-motor nervous system.

Marked assimilative and nutritive changes.

Increased heat production in the body, as well as increased absorption of oxygen and increased elimination of carbonic acid gas.

There is increased heat dissipation without lowering of body temperature.

EFFECTS OF HIGH FREQUENCY CURRENTS ON THE NERVOUS SYSTEM.

The most singular property of high frequency currents is that they are without effect upon the general sensibility and neuro-muscular contraction. It is indeed very remarkable that any current can be passed through the body at a voltage and intensity powerful enough to light a whole chain of electric lamps of one hundred and twenty-five volts, one ampère each, mounted in series, without causing the slightest bodily inconvenience. It is this characteristic of the high frequency current which distinguishes it from all other forms of electrical energy. Among the number of theories for this insensibility of nerve and muscle tissues the one generally accepted seems to be that of D'Arsonval: that the muscles and nerves are so organized that they only respond to excitation falling within certain limits and that they are perfectly insensible to vibrations following each other in such rapid succession as above 10,000 per second. This is in accord with the functions of the optic nerve which can distinguish ethereal vibrations only between 497 trillions (red) and 728 trillions (violet) while it cannot distinguish other vibrations either below the red or beyond the violet. In like manner the auditory nerve is only sensitive to vibrations of a certain intensity, no musical sounds being perceived which correspond either with extremely low or extremely high vibrations.

In addition to the remarkable absence of excitation it has been observed that high frequency currents exert an inhibitory action upon the muscular and nervous systems. It is to this that changes in blood pressure are attributed.

EFFECTS ON THE CIRCULATION.

It is commonly agreed that the high frequency currents will materially lower blood pressure by relaxing or dilating the arterioles. This effect seems to be more marked in diseases characterized by increased blood pressure, such as arteriosclerosis, than in health. In administering this current, care must be taken not to use it in cases of parenchymatous nephritis, lest a fatal relaxation of the arteries lower the compensatory blood tension

which is necessary to force the blood through the congested kidneys, and thus precipitate an acute uremic condition.

EFFECT OF HIGH FREQUENCY ON THE RESPIRATION.

Applied locally to the spine, the respiration becomes quicker and deeper. Auto-condensation also increases the depth and number of the respirations by about double and the amount of oxygen absorbed and CO eliminated in a unit of time. It increases the reduction of oxyhæmoglobin.

EFFECT OF HIGH FREQUENCY ON ELIMINATION.

It is generally recognized that the organic changes which take place in the body can in a measure be gauged by the excrementitious waste thrown out of the system. Since the kidneys play a very important part in the elimination of bi-products of the internal economy, as well as offer the greatest facilities for accurate observation, it is only natural to suppose that the evidence afforded by the exercise of their functional activity can with safety be accepted in determining the influence of the high frequency currents upon tissue metabolism.

The results of experiments by many investigators prove that high frequency currents, however applied, not only influence the amount of urine, but increase elimination of nitrogenous extractives, more especially urea, and increase the toxicity of the urine as well. One investigator, Morton, found that under high frequency treatment the amount of uric acid contained in the urine of patients suffering from chronic rheumatism diminished, while that of urea increased. Another proved by analysis that the quantity of urea present in the urine of cases treated by him rose steadily under electrization from eleven to forty-three or even sixty grammes. Still another has shown that in his cases electrization gave rise to an increased diuresis and elimination of urea as well as causing an increase in the oxyhæmaglobin of the blood, the improved nutrition not only stimulating desire for work, but also furnishing energy necessary to sustain it. These effects, it is conceded, are best obtained by the auto-condensation method and are maintained for about three days.

In summing up the action of high frequency currents on the body it must be remembered that their influence on the nervous system is manifest by absence of sensible re-action and by vasomotor effects. It has also been noticed that thev cause a decrease of blood pressure and an increase in the number and depth of respirations, as well as in the amount of oxygen absorbed and CO_2 eliminated. The internal respiration of the tissues and blood being increased, there is a consequent increase in the

amount of heat produced and in the quantity of urine and urinary extractives eliminated by the kidneys.

From the foregoing statements dealing with the physiological properties of high frequency currents it is obvious that the currents are capable of exerting a considerable influence on tissue metabolism. As the general systemic effects are more in evidence with the methods classed together under the head of "general D'Arsonvalization," it is only natural to expect that some of these methods would prove most suitable for the treatment of general diseases dependent on perverted tissue nutrition or of local conditions which are the partial manifestation of an underlying general dyscrasia.

Thus it is that general D'Arsonvalization has been employed in the treatment of gout, rheumatism, obesity, diabetes, and in the neuro-central and peripheral manifestation of these diseases. Again, as the anesthetic properties of the currents are most prominently brought forward by local and direct applications, it is evident that these methods can with advantage be employed in overcoming pain and discomfort arising from exaggerated nervous sensibility. This at once suggests their employment in pruritis, muscular rheumatism, neuralgia, pleurodynia, sphinctoralgia and a host of other local affectations, in which pain is a prominent symptom. So, similarly, can the myasthenic influence of these currents be rendered useful in overcoming muscular spasm in those diseases in which it is a prominent symptom. This at once connects itself with asthma, vaginismus, anal spasm, and other spastic conditions.

The consideration of these physiological actions suggests a very wide scope of clinical application for the high frequency currents.

While the action on the cell is largely conjectural, it is clinically demonstrated from this method of administration that metabolism is increased and a feeling of well-being induced. It is also clinically shown that patients not affected with organic lesions when receiving courses of treatment have the normal functions of the system restored. This is evidenced by the marked increase of elimination and secretion, increased body weight, and a gradual restoration to normal proportions of the elements of the blood. The clinical observations indicate that a general increase of cell activity with restoration of their normal actions is induced. When it is observed that this may take place regardless of a regulation of exercise and habit, it would seem that these administrations to patients whose habits and avocations are sedentary, take the place in a measure of physical exercise, probably due to the induced activity of the cell which tends to pre-

serve the balance in the economy, thereby furnishing a valuable means of eliminating effete end products, and forcing tissue combustion. When employed, however, in conjunction with exercise greater benefit may be derived. In the helpless invalid who is unable to take exercise, they are invaluable in that they induce nature to the active performance of her normal functions.

Of the many affections in which the high frequency currents are found valuable adjuncts of treatment but few can be mentioned within the time allotted this paper. It is found useful in the treatment of arteriosclerosis, and if the arteries are not too rigid through calcareous deposits, it will reduce the high blood pressure, stimulate elimination of waste products, and improve the general nutrition and tone of the system. It is extremely doubtful if this or any other known means will actually restore the arteries to their normal elasticity, but it is one of the means of lessening the tension and will go far toward preventing the cerebral hemorrhages to which these cases are peculiarly liable, and will help materially in prolonging life in greater peace and comfort. I quote from a recent paper of Doctor J. P. Sutherland's: "Other therapeutic agents which are not pharmacologic in character include electricity, more particularly, in the form of the modern high frequency current. This I have used extensively, and I feel justified in speaking positively in regard to its power to modify metabolism and restore defective elimination to the normal, or relatively normal standard. I have not, however, as yet been able to determine that it permanently reduces a high blood-pressure, when once this high pressure has become established."

Case of a frail and anemic woman 63 years old, with blood pressure of 175 mm. at beginning of treatment. After thirteen applications of high frequency current by means of auto-condensation of twenty minutes each, the blood pressure is now 145 mm. with corresponding improvement in strength, appetite, sleep, subsidence of prickly sensation in feet, vertigo, and mental depression.

Even in the "resisting cases," cases of old people where treatment does not reduce blood pressure, the current does not depress the heart, but, on the contrary, is beneficial, due probably to the influence upon general metabolism, promoting, as it does, elimination of waste matters which are liable to accumulate in old people, the subjects of advanced arteriosclerosis. For this condition, treatments of about 20 minutes each by the auto-condensation method have generally been more efficacious, treatments three to seven days apart.

DIABETES.

In diabetes accompanied by high blood pressure, auto-condensation will reduce the tension and frequently with it the excretion of sugar in the urine, and promote a feeling of well-being. Certainly it seems that the action of high frequency currents here is worthy of further study.

NEURITIS.

In many forms of neuritis and neuralgia high frequency current, usually by means of the glass vacuum electrode, seems to be well-nigh a specific, so promptly do the painful symptoms subside. Sciatica, pleurodynia, herpes-zoster, brachial neuritis, neuritis of plumbism, nervous headaches, and kindred affections yield very promptly to this method of treatment.

A case of sciatica of two and one half years standing was cured by high frequency, and no return after a year.

Zoster of thigh causing three or four sleepless nights on account of pain, was cured in two treatments; there was no pain after the first treatment. Radiant heat and light had no effect on this case.

The high frequency by means of the vacuum electrode is recommended for follicular tonsillitis, and in two cases, recently, one or two ten minute treatments cut short, seemingly, what promised to be severe attacks.

SKIN AFFECTIONS.

Warts and moles are easily removed by high frequency through a pointed metal electrode by means of fulguration. A local anesthetic is recommended to deaden the pain. An advantage of treating these growths in this manner is that absolute asepsis is insured, and the cauterized epidermis makes an ideal dressing, which drops off in a few days, leaving a smooth skin and no scar.

Acne is benefited by high frequency given by means of a vacuum glass electrode in such manner as to cause sparking. The benefit seeming to come in large measure through the antiseptic action of the ozone generated by the current in its passage from the glass to the skin, as well as to the stimulation of the circulation in the part treated.

Eczema, psoriasis, pruritis and fissures often yield most gratifying results from this method of treatment. A condition which would seem to be much benefited by the vacuum urethral electrode is chronic gonorrhoea and gleet, and a number of writers report encouraging results therefrom.

CONTRAINDICATIONS TO USE.

Contraindications to the use of high frequency currents are the pressure of low arterial tension, a degenerated heart muscle, acute inflammation of any of the viscera, infectious fevers, advanced tuberculosis, and parenchymatous nephritis with high blood pressure. It is to be remembered that in incipient tuberculocis high frequency may be of therapeutic value.

X-RAY.

In conclusion, let us mention a product of the high frequency current, the x-ray. Not long after it was observed that the Röntgen ray had a harmful effect on the tissues, the possibility of its having a beneficial effect naturally suggested itself, and its action on all forms of disease was tried.

To dermatology, especially, it has been a great boon in the treatment of obstinate diseases of the skin such as psoriasis, chronic eczema, and sycosis.

In lupus, epithelioma keloid, carcinoma, exophthalmic goiter, tubercular adenitis, and Hodgkin's disease, its results have been rather encouraging.

Perhaps the greatest service of the x-ray has been to give us a clearer idea of the lesions of fractures and to improve our skill in the diagnosis of fracture by proving or disproving the clinical diagnosis.

In spite of the thousands of attempts which must have been made to cause the disappearance of carcinoma and sarcoma primary in the deeper parts of the body, so few successful cases have been reported, that operation where possible must still be preferred. In inoperable cases the x-ray may be used with a little real hope, for a number of authentic cures have been reported.

The x-ray often affords temporary relief in post-operative recurrent cancer.

Reports of its use in Hodgkin's disease have been so uniform that it may be stated with a fair degree of certainty that the glandular enlargements may be made to shrink and even disappear, but that during this process such a toxemia becomes evident that the fatal termination of the case may be hastened.

In spite of the fact that as yet it must be confessed that the x-ray has not proved a great success as a therapeutic agent, one must admit that it is a powerful agent and that as knowledge of its administration increases, we may look for it to take a more definite place in the treatment of disease.

URINARY INDICATIONS OF THREATENED ECLAMPSIA. *

By S H. Blodgett, M. D., Boston, Mass.

Medical literature teems with articles on puerperal eclampsia and the opinions expressed by the various writers as to the cause are exceedingly varied. Some writers claim that only 40 per cent. of the cases of eclampsia are due to faulty action of the kidney, while others claim that even as many as 90 per cent. of the cases are due to this cause. I shall not discuss here how many of the cases are due to so-called faulty action of the kidney, but rather what indications we can get from the urine which will allow us to foretell the probable on-coming of convulsions.

In the first place I will state that frequently by examination of the urine we find abnormalities which, if the proper treatment is not commenced, will go on until more serious trouble occurs. I have seen a number of times, in cases of pregnancy, a condition where the urea out-put was far below what should correspond with the intake of nitrogenous food and in these cases the simple elimination of nitrogenous food from the diet for several days has the effect of increasing the amount of urea eliminated, with the further effect that following the non-nitrogenous diet the patient has been able to return to a diet containing a fair amount of nitrogenous food without any ill effects following it.

I am frequently asked as to my feeling in regard to the estimation of ammonia nitrogen in cases of pregnancy, and perhaps I might as well answer the question here as later. The estimation of ammonia nitrogen in the urine is an exceedingly delicate and complicated process and one which cannot be performed by a physician in his own office and is not done even in some of the large laboratories. This is one argument against the use of this test in every case of pregnancy, but what appeals to me as the strongest argument against its common use is that we have, up to the present time at least, been able to foretell the probable on-coming of convulsions without the use of this test and it seems to me that the only place where this test may be useful is where, from our other tests and symptoms, we may not be able to make a decision. In making this statement I realize perfectly that the value of the deductions drawn from the urinary analysis depend entirely upon the person drawing the deductions and my whole aim has always been to enable the conclusions to be made from the simplest analysis possible, and I feel very strongly that the fewer and more simple the tests which we use to allow us to draw our con-

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* Read before the Massachusetts Homœopathic Medical Society, April 10, 1912.

clusions the more likely the general practitioner is to make use of them with resulting benefit to his patient. I fully realize that many men may prefer to use the nitrogen determination tests to enable them to draw proper conclusions from the urinary examination of a pregnant woman, but up to the present time I have been able to foretell the probable on-coming of convulsions with just as much accuracy without making use of this test.

As an illustration of my position on this question, I might say that if two carpenters wish to remove from the edge of a board a strip an inch wide, one of them may use a hatchet because he has become skillful in its use, while the other one may require the use of a rip-saw, not being as skillful in the use of the hatchet. The result is the same, as each removes the inch of board and leaves it ready for the plane.

The analysis of the urine of which we commonly make use in the case of a pregnant woman is the total amount, the color, specific gravity, the urea, the albumin, the sugar, acetone and, if necessary, the sediment, and from this data, with at times the additional help of the symptoms and the diet, we have been able to foretell the on-coming of nearly all cases of eclampsia during the past 1500 cases which have been admitted to the Maternity Department of the Massachusetts Homœopathic Hospital when we have had the chance to make the urinary examination before labor began. Of course, you who have to do with large maternities realize how disappointing oftentimes it is not to be able to make the pregnant patients bring at stated intervals the required specimen of urine, and it is among these cases that most of our cases of eclampsia have occurred.

When a disease or a condition becomes so amenable to simple treatment that there is no danger or after-effects if a patient is afflicted with it, then the symptoms by which we can foretell the probable occurrence of that disease may be neglected; so if the treatment of eclampsia or puerperal convulsions becomes exceedingly simple and successful then the systematic examination of the urine, so as to foretell its probable on-coming, would be a useless proceeding.

I want to impress on you the fact that I can give no absolutely fixed rules which can be applied to every case of pregnancy by which you may decide whether eclampsia is likely to occur or not, and I must urge you to consider not only the urinary analysis but also the diet of the patient during the time that the urine was being collected, the amount of exercise that the patient has taken, the weight of the patient, the blood pressure and also whether there are any abnormal symptoms present.

As regards the urinary findings, I will first consider the nor-

mal urine which we expect to encounter; the amount of urine may be increased or decreased. I think the tendency is to rather increase, let us say about 1500 to 1700 c. c. in twenty-four hours, although if the rest of the analysis should be normal I should not call abnormal a twenty-four hour amount of only 600 c. c. The color is more apt to be pale than high colored and is also apt to be turbid, due to bacteria. The reaction is less acid than normal, in fact oftentimes neutral or slightly alkaline. The total solids are usually normal, but the urea is decreased in amount. If the normal amount of urea for the case under consideration would be about 20 gms., during pregnancy, especially after the first few months, we should expect to find the urea from 14 to 18 gms. The chlorides are frequently somewhat increased; there is almost always a slight amount, at least, of albumin present and frequently quite a considerable amount of it. Sugar is not normally present and if it should be it would not be of much moment in the consideration of the probable occurrence of eclampsia. There is more or less sediment, usually more than less; bladder and vaginal cells are usually present, mucus with some pus and a large amount of bacteria. A few hyaline casts or fine granular casts without other abnormal elements may be considered as without clinical significance.

The above analysis is what we would expect to find in the average case during pregnancy, and it is the variations from this that we must watch for as the danger signals to warn us of approaching trouble in the system. Of the solids the urea I consider the most important, and when this begins to decrease while the nitrogenous food which the patient has taken remains about the same, it is time to watch the symptoms carefully. As the urea output approaches 10 grams a day, especially where the patient is taking fairly balanced rations, we should suspect the possibility of poisoning and should make frequent urinary examinations. If, as the urea decreases, the albumin begins to increase, we should be still more watchful of the patient. On the other hand, if there has been a very considerable amount of albumin present and the urea is being eliminated in a normal amount, the chances are that the albumin is due to a passive hyperemia and need not cause us alarm. A persistently low phosphoric acid output (approximately 1 gram a day or less) if continued through several examinations should cause us to watch the patient carefully, especially if in addition we find that the daily output of urea is decreasing.

A urine of normal color but of a low specific gravity (from 1010 to 1012) should also cause us to watch the patient carefully.

The urinary indications during pregnancy must be considered only as one of the symptoms which we must watch in regard to

threatened eclampsia, but in the larger number of cases it is perhaps the earliest symptom and also the one from which we can most easily get the best indications as to the progress of the case. In my opinion, based on experience, I believe that careful urinary examination during pregnancy will allow us to foretell and perhaps avert an attack of eclampsia in at least ninety per cent. of the cases.

RADIUM: A PERSONAL EXPERIENCE.

By Henry Edward Spalding, M. D., Hingham, Mass.

After forty-five years of active service in the medical profession ill health compels me to lay aside my task. During these years my observations and experiences, however much or little they may have been worth, have been freely offered to my confreres in monographs and discussions. I feel perhaps that I am now offering my last communication, my valedictory, to the medical profession, hoping, trusting that it will be of unusual interest and value because few physicians have had the opportunity to diagnose a similar condition on their own person, then to successfully direct treatment with the same remedy and observe its results.

About a year ago I had a first cerebral hemorrhage, not extensive and with slight paralysis, which I was told was due to indigestion, but I suspect that my physicians knew that it was the result of a more serious condition. By April I had practically recovered and was taking up my work again when another hemorrhage, more extensive than the first, occurred. This was followed by a right-sided paralysis, including both arm and leg. Aphasia existed, and for the first few weeks consciousness was clouded, and I know of them only what is told me. Hence I will pass by that stage of my trouble. At the end of about four months I was perfectly clear mentally, able to express myself intelligently, and fully cognizant of my symptoms and what was going on about me. Here let me say that for some time before this I had known what I wished to say, but the saddest part and the most difficult to bear was my inability to make known accurately what I wished to say and have done. But to go back. I regained to quite a degree the use of my foot and leg, but the arm while moveable did not do so well, yet I wish to emphasize the fact that I comprehended perfectly everything around me and everything that I wished to do and say. Hence I believe that I was perfectly competent to observe and judge of my physical condition.

For weeks I had been growing more and more conscious of my condition and I had discovered that my right foot, the affected

one, had been becoming more and more painful, especially that portion near the toes, and it had become swollen. The toes themselves showed comparatively little swelling, and had become very cold. Finally the pain became very intense, and after enduring it a week I examined the foot carefully and found on the inner surface of the second toe a black spot about one-fifth of an inch in diameter, the surface of which was a little depressed if anything, and around it was a very distinct swelling. It was quite impossible to remove it, and on attempting to do so I found it peculiarly sensitive. My nurse said that there was a spot similar in both character and size on the small toe, but it was impossible for me to twist my foot so that I could see it myself. The swelling and coldness that existed in the toes extended somewhat up my foot. My astonishment was great, for I knew that the discoloration on the toes had come on during the preceding few weeks, and that the condition of the foot had materially changed. I felt no hesitancy in diagnosing the condition as one of dry gangrene of the foot. I was convinced that by the use of radium and by that alone did I have any hopes of arresting or curing this trouble. My attending physician was consulted and gave his consent to its use.

To be candid, I was not very sanguine of success. I knew that I was attacking the disease in its early stages, but I did not believe that I was early enough to check its ravages, to say nothing of its cure.

I had only a limited experience with radium in similar conditions. In one case that had come under my care the disease had so far advanced that the toes and part of the foot had been destroyed. After mature deliberation it seemed to me that the best hope I could hold out would be that I could lessen the amount of pain and retard the advance of the disease by the use of radium. In this case I found that it relieved the pain to the extent that it was then possible to omit the use of opiates, which had been given for some weeks, and the patient was perfectly comfortable. He gained in strength and appetite, and his general condition so improved that he was able to successfully undergo the operation of having his leg amputated. Since then he has been able to get along comfortably and to enjoy life.

To return to my own case. We commenced using the radium (300,000 units strength) for five minutes on each of two places on the dorsal surface of the toes and the same on the plantar surface, morning and night. I felt that if anything at all was to be done with this method of treatment it must be done at once and vigorously. After using it two days I felt confident that it was lessening the pain, and after a few days longer there was no doubt, the

pain was ceasing. For the first few days, say ten days, I could detect no other change in my foot, but then it began to be evident that the foot was warmer. The blood was circulating more naturally through its vessels. Some blood vessels showed that could not be seen before. In the course of three or four weeks the swelling was perceptibly less, the foot was becoming more and more natural in its appearance. I was getting little or practically no pain in my foot. At the end of six weeks the swelling and the discoloration on the second toe were entirely gone, and at the end of eight weeks that on the small toe had practically disappeared, leaving only the tiniest spot of black. There is a depression and a slight roughness on the surface, but otherwise the skin appears to be perfectly healthy.

After the first ten days the time of treatment was reduced to three minutes for each application, then for about a week it was used only once a day, then for three weeks the time was still further reduced to two minutes. Since then it has been used one day on the dorsal surface and the next day on the plantar. The foot has become more sensitive to radium than it was before, sometimes even a two-minute treatment causing a temporary increase in the pain.

I am suspicious that the approach near the earth of Brook's comet may have made the radium more active than usual, and thus given me more speedy relief than I would otherwise have enjoyed. A year or more ago, when a comet was visible in the heavens, we discovered that radium was more active than at other times. By my spinthariscope I found that I could see the scintillations promptly in ordinary twilight and at greater distance, whereas usually with the spinthariscope it is necessary that it be exposed in absolute darkness and watched for from three to five minutes before the light can be observed. Therefore I have had the benefit of especially active radium for the treatment of my foot.

I would here emphasize that it is useless, absolutely useless, to employ a weak preparation of radium in the treatment of disease. Scores of physicians have been deceived and have held out false hopes to their patients by the use of twenty-five thousand units or even less. I have not been successful in obtaining results from less than three hundred thousand units. The only use I have found for the weaker preparations is their injection into the tissues. In this way we may find use for solutions containing five to twenty-five thousand units, though the expense is great.

Some have evidently considered X-rays and radium scintillations to be synonymous terms, that if one obtained benefit from radium he would likewise obtain benefit from X-rays. This I maintain to be an error. Just what the relation between the two is I cannot say, but this is certain, the X-rays may absolutely fail to

give relief in a case, and radium work potently, and vice versa. Never for a moment should one think that X-rays and radium can be used interchangeably. Future observations and investigations must decide which remedy will be the more potent in certain cases, but I sincerely believe the radium will be found to fill a larger therapeutic field.

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M.D.

Case VI. C.—Diagnosis: Pernicious Anæmia.

This case illustrates nicely the relation between this disease and combined sclerosis, so well pointed out by Dr. J. J. Putnam, of Boston, but a few years ago. Practically all writers agree now that there is a type of cord lesion characterized by multiple points of degeneration involving both the sensory and motor segments of the lumbar cord which is dependent upon an impoverished blood supply and especially upon pernicious anæmia. Although closely allied to spastic paraplegia, this syndrome seemed to occur with sufficient definition and frequency to permit of separate classification.

About a year ago the patient had so much weakness and heaviness of the legs, together with some parasthesias and irritable knee-jerks, that she was taken to a neurologist who decided that although the symptoms were suggestive, they did not constitute sufficient evidence for a diagnosis.

The patient was evidently anæmic, and the color test showed the hemoglobin to be low, but the physician was content to say that she was anæmic without differentiating microscopically between the primary and secondary forms. This it seems to me is important, because we occasionally see reports of cures of pernicious (primary, idiopathic) anæmia, based upon insufficient diagnostic evidence.

The essential characteristics of the blood in pernicious anæmia are that the red cells are reduced sometimes to one million or less. The hemoglobin, though actually low, is still high in proportion to the number of red cells. Magalocytes (large red cells) form a large percentage of the reds (33 to 90 percent-Ewing), but during remissions may be very scanty. In fresh blood coagulation is feeble and rouleau do not form. "The leucocytes are usually reduced in proportion to the severity of the lesion in the narrow and the progress of the disease, and relative lymphocyosis is the rule."

"The essential lesion of the disease is a megaloblastic metaplasia of the lymphoid marrow which is invariably present, is pathognomonic of the disease, and in many respects resembles a

tumor formation affecting the progenitors of the red cells," Ewing.

Regarding diagnosis, Fitz says: "The progressive character of the severe symptoms, and the absence of a satisfactory cause, are of essential importance in the differential diagnosis between various forms of secondary anæmia and pernicious anæmia. The diagnosis is confirmed by the recognition of retinal hemorrhage, and is established by the results of the blood examination."

This patient lapsed into a mild delirium, evidently the result of an anæmic brain, and died in coma.

Case VII. c.—For diagnosis:

The patient is a young woman twenty-four years of age and of New England stock for several generations. Her family history seems to have little bearing upon the present illness. The father is a seafaring man and very domestic. The mother is a quiet, conscientious woman, but has a sister who is peculiar. There were several children; the one most resembling the patient died of peritonitis following appendectomy at thirty.

The patient has always been considered nervous by the family and has been especially guarded by the mother, who has babied her. At four she sustained a fracture of the right humerus at the elbow. Growing up with brothers near her own age she was a tom-boy, and it was a great shock to her when her menses appeared at thirteen. She realized then that she must assume the role of a young woman. She would not go out of the house for two days nor let any member of the family, save her mother, come near her. The periods have never been regular, but beyond being excessive at times have not been troublesome.

As a child a slight fright would cause her to lose her breath and turn pale. She was unusually bright at school and graduated from the high school at sixteen, entering normal school the same year.

When about fourteen she saw her little niece have a convulsion and stiffen out. Shortly after this a playmate and close friend accidentally shot himself. Also about this time the patient's sister died and was brought home,—the child's first experience with death. She was hysterical and went to a neighbor's, refusing to stay at home. After she once saw the body it fascinated her and she would not leave the room.

Her present illness began during the close of her first year at the normal school. She had worked very hard and was run down. One day in the physics class she was the subject of study with the X-ray, because of the mal-position of her fractured elbow. She held her arm for the class to look at one by one and

got many fine electric sparks from which she was too proud to flinch. At this time she believed herself to have a strong will and took intense likes and dislikes. She was then, as now, vivacious and almost abnormally alert. The next day, though very tired, she took a ten-mile walk, and when she returned was too tired to eat. The next morning she was too ill to rise and by noon was having convulsions and tonic spasms requiring a person on either side to keep her in bed. This continued more or less for a week, during which time she was semi-conscious and objects receded,—space elongated. She had a slow convalescence and was not allowed to return to school. Since that time she has taught school most of the time and has had occasional faint spells. Four years ago, following a misunderstanding with two friends in which there was much jealousy, the attacks began to be accompanied by rigidity of the left side and clonic spasm of the right, which is always the weak one. If she falls, it is to the right, and once she hurt her right shoulder so that she could not use the right hand for four days. The right hand grasp is only half as strong as the left, although she is right handed. Sometimes the attacks come on suddenly, and she has fallen out of a chair. She says there is a feeling of the blood surging, which ends in the top of her head and vision becomes dim. She thinks she does not lose consciousness but admits that there are a few moments at first when she loses her grasp on realities. She has a smothered feeling and her head draws back.

During the spasm she cannot speak. The left side is rigid, the hand clutched, while the right performs gyratory motions. The eyes may be open or shut, remaining as they chance to be when the attack comes on. After the attack is over she can tell much of what occurred in the room. She says that sights and sounds seem to recede to the far distance. The attacks last from ten minutes to an hour; she does not change color, or froth or bite herself. She thinks she has these attacks in her sleep, beause often in the morning her palms show the imprint of the finger nails. When she comes out of them, she is wide awake and mentally clear. She dreams much, most commonly of trying to climb up a sandy hill, but always slides down and can never reach the top.

Physical examination reveals little except that while she has weighed 118 pounds, last winter she dropped to 98 and is now only 103 pounds. There are no anesthetic areas, and the field of vision is normal. The deep reflexes are exaggerated. The association tests so far have revealed nothing. Temperamentally she is cheerful and active.

What is the matter with this patient?

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business, should be sent to the Business Manager, 422 Columbia Road, Dorchester, Boston, Mass.

The GAZETTE does not hold itself responsible for the opinions expressed by its contributors.

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Reports of Societies and Personal Items should be sent in by the 15th of the month previous to the one in which they are to appear. Reprints will be furnished at cost and should be ordered of the Business Manager before the article is published.

IODINE IN MEDICINE.

Just as it is interesting to follow the history of a man who has risen triumphant over all manner of hardships, so is it interesting to the medical man to follow the history of a certain drug which has eventually attained a stable place in the field of medicine. At the present writing the interest centres about Iodine.

In 1820 Coindet of Geneva proved that the curative properties of burnt sponge and seaweed in the treatment of goitre were due to the presence of iodine. In 1855 Boinet published a large volume on Iodine in which that drug was recommended for the cure of all diseases in the category, including leprosy, cancer, tuberculosis and syphilis. He even called attention to the fact, remarkable at that period of preantiseptic days, that through the employment of iodine fœtid or virulent pus became transferred into "laudable" pus.

Indeed, had the investigations and suggestions of Boinet been carried to their logical conclusion, Lister would have been antidated twenty years. It is equally true that had Lister happened to choose iodine instead of carbolic acid as his germ-destroying agent, the progress of antiseptic surgery would have been materially more rapid. But after the lapse of so many years iodine is coming into its own, and the bactericidal powers which Boinet discovered for this agent in 1855 are only just beginning to be fully appreciated. Laboratory workers and surgeons are now practically agreed that Iodine is the most powerful, the least harmful and the most easily managed microbicide which we have.

As to its easy management, Lejars speaks of the rapid prep-

aration of the workingman's hand for treatment of an incised wound. The hand may be covered with grime, fat, dust, debris, all swarming with pathogenic germs. Instead of scrubbing, scraping, soaking and thus inflicting more traumatism and consuming time, we need but paint the hand with tincture of iodine, one-half strength, going over it thoroughly with a swab of soft gauze when it is ready for treatment.

In the after-treatment of this same hand, iodine is an ideal agent for keeping it clean and disinfected. The days of soaking for hours an infected hand or finger in bichloride of mercury are passed, and in its place comes the painting with iodine or the washing out of sinuses or cavities with the same.

In surgical emergencies it is *par excellence.* A major operation can be undertaken immediately with little fear of introducing infection by using iodine for bathing the hands of the operator, cleansing the parts to be operated upon, and, in the absence of sterile water, making a watery solution of iodine.

In the bites of poisonous insects, reptiles and other creatures, it has long been regarded as the most reliable antidote, and confidence in this belief has been fully sustained by recent tests in the jungle. For gunshot wounds and compound fractures it is an excellent disinfectant. Its almost universal use in preparing the skin for operation demonstrates its reliability as a skin disinfectant.

The almost sudden recognition of the virtues of iodine is another of the strange examples of resurrecting a wellnigh discarded agent.

SANITY AND SAFETY OF THE "FOURTH."

There can be no better index of the growth of practical common sense, combined with a higher regard for human life, than that witnessed in the present-day manner of observing the "Glorious Fourth." The passing of the deadly giant firecracker, the muzzle-loading cannon, the toy pistol, together with other mutilating and lockjaw devices, is a hopeful sign of the times for further conservation of life and limb.

The steady decrease of fatalities and injuries from 215 deaths and 5,460 injuries in 1908 to 57 deaths and 1,546 injuries in 1911 in United States is surely a gratifying showing, but 57 deaths is just 57 too many when such are absolutely preventable, and the appalling number of 1,546 more or less maimed for life is a terrifically high toll to pay for the questionable pleasure of making a noise.

By all means make the Fourth an object lesson in patriotism. The youth of the land cannot have instilled into their minds too

much of a reminder of those self-sacrificing Revolutionary patriots whose heroic sufferings gave us our liberty, but making a noise with deadly explosives is no part of a patriotic lesson. The better substitute of games, outdoor parties, picnics, contests of strength, and educational moving pictures illustrating Revolutionary incidents, can be made to appeal to "Young America" quite as much as mere noise. But whether it does or not, the physicians of America are not only quite ready to give up another source of revenue, resulting from such injuries, but unite as a body in protesting against a custom which needlessly makes cripples and relentlessly add to the death list.

THE PHYSICAL AWAKENING OF THE BOY.

The general awakening of parents, educators, and all persons who work with boys upon the subject of sex education is most sane and timely. Too long have we kept silent upon this all important question of instructing adolescent youth regarding the moral and physical aspects of sex life. Boys and girls have a right to expect their parents to inform them concerning this subject, and it becomes an imperative duty on the part of the parent to impart this knowledge. Sinning through ignorance places a terrific responsibility upon those who should enlighten.

There is a turning point in the life of a boy which promptly recognized and rightly understood will lead to pure manhood.

We have had much sentiment and some prose about the springtime of youth, but have we had any serious analysis of what it really is? Suppose we start with the boy before the germs of self consciousness have even begun to breed, and watch his physical development. His playmates are girls and boys, and the only difference between them, in his mind, is that the girls wear skirts while the boys wear knickerbockers.

A little later he is dimly aware that the girls do not run and jump and climb as they used to do, but it is in vain that he seeks the explanation further than to lay it to the girl's overcareful mother and the fear of mussing her dress. Then it is that he reaches the conclusion that he is glad he is not a girl.

Then comes the period of girl hatred. A vague sort of a wish that there were no girls in the world except his sisters who are already grown up. But suddenly, just as he has succeeded in convincing himself that an Eve-less Eden would be the boys' paradise, he finds himself looking into the blue depths of some sweet little maiden's eyes. When lo! there is a catch in his throat, a throb in his heart, a tremor of the muscles, and the red blood goes surging to his face in blushes that mount to the roots of his hair.

A moment before and she was nothing but a nuisance of a girl, but now she has become an angel, and he is in paradise because he is near her. He cannot conceive of a place more dreary than one without a girl, especially this girl. What hath wrought the magic change?

What makes him blush to look into her eyes today when yesterday he would not turn his head to look at her? What makes his pulses quicken when he hears her voice, his nostrils dilate as he catches the perfume of her handkerchief? What makes him thrill from head to foot when her skirt touches his body? What gives him the endurance of an animal to carry her miles on her sled, and a longing desire to scale mountains and cross seas for her?

It is the bursting of the buds of spring, and with it he has passed the threshold of boyhood and entered the doorway of youth. A hitherto unused part of his brain, a new centre has suddenly been awakened and as a result he has thoughts, emotions, desires, aspirations and impulses which before were unknown to him.

This newly awakened brain centre is sending strange and unheard of messages to his five senses, which bring a new world before him. He hears, sees, tastes, smells, feels something so deliciously intoxicating he wonders where he is and what has become of the old matter-of-fact world which so recently encompassed him.

It is doubtful if ever mortal man is nearer the spiritual than at this moment of his physical awakening. And here let us repeat, there is a turning point in the life of a boy which if promptly recognized and rightly understood leads on to manhood's purity.

If this boy were a flower we would analyze him by pulling off each petal, stamen, anther, ovule and pistil and tell just how each is developed and what its functions. But being a boy and not a flower we are content to guess at his feelings and if the guess is wrong, what matters it, he is only a boy!

While we consider the lilies of the field we sometimes forget that the life is more than meat and the body than raiment.

Left to himself the boy does not know the *meaning* of all this transformation, he is conscious only of the purest thoughts and the most tender feelings which he has thus far experienced in life, and are we, his elders, going to be so gross as to enlighten him?

No, not gross, because there is nothing gross in it except in our grossly erroneous old idea that the whole subject is gross, where in fact it is beautiful and sublime. It is doubtful if there is any great question concerning the happiness and welfare of the human race which has been more misunderstood, falsely taught and ignorantly feared than this one of sexology.

Let us once and forever throw off the shackles of that old-time belief that this subject of sexology is debasing, gross, or even indelicate, but rather regard it as the highest and most dignified of all the subjects pertaining to human physiology and sociology, and one upon which we should instruct the youth of the land carefully and accurately.

This awakening sense in the boy is of such tremendous importance as affecting his future physical and moral life that to allow it to go undirected or uncontrolled becomes a crime both to him and society. Now comes the important question, when, how,

by whom and to what extent should this delicate instruction be imparted.

First: *when.* The beginning of this instruction should be in childhood, when the boy first begins to notice the body.

Let the mother begin the sex education by teaching the young boy the proper names of his external genitals and then teach him to respect them. Make him understand early that those are almost sacred organs never to be handled or exposed except for cleanliness or demands of nature. Above all he should not be given the idea that they are vulgar or gross. But rather the contrary, that they are chaste above all organs of the body.

It is natural that as he grows older he will become more reticent with his mother on such subjects, and here is where the father who has won his way into the boy's heart by that close comradeship such as father and son can only have will cement that union into an indissoluble tie by closely watching the boy's development and at the proper moment unfold to him the mysteries of sexology. Such knowledge should not be imparted all at once, for it could not be comprehended and it would be doing harm. But a gradual unfolding of the wonderful subject, beginning first with the boy himself and the development of the physical body.

As the years pass and the boy reaches the age of thirteen or fourteen he should be more especially instructed as to the meaning of certain phenomena, which failing to understand, might and so frequently do, lead to worry, unhappiness, and occasionally, melancholy. It is here that the boy not infrequently falls into the hands of the charlatan and quack who prey upon his ignorance and fears and instead of relieving him of his worry add to it by painting his condition worse than it is.

Nothing is more pitiable than to see a haggard, hollow-eyed boy making frequent clandestine trips to the office of that miserable parasite of society, the "lost-manhood" quack, and spending his money to be cured of what is not a disease but simply nature's relief vent. Every boy should be told plainly about nocturnal emissions and that they are *physiological* and not *abnormal.*

Next the developing boy should be told in plain language just what are the dangers of masturbation and how to avoid the practice. One of the greatest helps to a boy once addicted to the habit is a confession of his practice to one who is in sympathy with him and in whose strength he is conscious of help. The mere confession is a long step toward the cure. Boys need not be told the physiology of reproduction until 16 or 17 years of age, but at that age they should be told in a comprehensive manner and with that should be taught the dangers of disease attending an impure life. No boy should be allowed to go away to college without a thorough knowledge of venereal diseases and their far reaching consequences.

The next question is a pertinent one. *Who* is best qualified to impart all this knowledge to the growing boy? The foundation

should be laid by the mother if she is at all capable. Later the father should be the instructor. If he is absolutely incapable then the family physician or a male school teacher should thus instruct him. Naturally from the nature of the subject and its importance the physician is best qualified to be such an instructor, and it is my opinion that this subject should be handled by physicians only in our high schools and colleges.

In closing permit me to say, "there is a turning point in the life of a boy which promptly recognized and rightly understood leads on to manhood's purity," and if we are prepared with outstretched hands to meet the awakening boy at the very gateway of budding youth and guide him safely over that path which is so thickly beset with pitfalls, we shall not only have brought future happiness to that individual boy, but we shall have laid the foundation for the physical and moral betterment of our nation, which shall not be shaken by winds or floods, because it will be founded upon a rock.

THE PITTSBURGH SESSION OF THE AMERICAN INSTITUTE OF HOMŒOPATHY.

The sixty-eighth annual session of the A. I. H. has passed into history, and the summary of the aftermath makes interesting reading.

Few meetings of this national body have of late years witnessed the presence of so many of the old war horses as were gathered at the Pittsburgh assembly; hence it was not only a meeting of good average quantity but one of excellent quality as well.

The registration showed about three hundred physicians present, which, with friends and visitors, swelled the number to about five hundred. One hundred and sixty-eight new members were added to the list, which was a better showing for new recruits than we have had in some years. If friends or foes are obsessed by the delusion that Homœopathy is afflicted with marasmus and is passing into a rapid decline, they should have attended the Pittsburgh meeting, and the cure would have been immediate and lasting. The refrain from each business session was a more profound belief in the Law of Similars, a desire to demonstrate that law by incontrovertible scientific proof, a determined propagandism which should induce both the profession and the laity to make more rigid tests of that law, a dignified but unflinching stand for all our legal rights, and a generous attitude towards members of the dominant school, with the hope that they may give this law a fair trial and that we may co-operate with them towards securing better medical and public health legislation.

The memorial service on Sunday evening, June 16, conducted by Dr. James C. Wood, of Cleveland, was thoroughly fitting such an occasion. Dr. Wood's address was so replete in portraying "The Composite Physician" that we feel fortunate in securing it for later publication in our pages.

The opening exercises on Monday evening witnessed an assemblage of some eight or nine hundred people in the spacious auditorium of the beautiful Soldiers' Memorial building. The address of Lieutenant Governor John M. Reynolds of the State of Pennsylvania was especially interesting in that it showed an unusually comprehensive understanding of the attitude of the medical profession today, and especially so in its altruistic desires for better sanitary and public health legislation. He showed how splendidly Pennsylvania has forged ahead in securing some of the most ideal requirements along this line.

President Carmichael's address was in keeping with the character of that able physician and scholar. We trust the readers of the *Gazette* will have an opportunity later to read it in our pages.

In furtherance of the work of obtaining new members, a suggestion offered by Dr. M. Elizabeth Hanks and later incorporated as a resolution, was to the effect that hereafter certificate of membership in the A. I. H. be presented to each graduate in medicine from all the homœopathic medical schools in the country on the day of graduation, such certificate carrying with it a paid-up membership in the Institute together with a paid-up subscription to the Journal of the Institute for the period of one year.

The report of the Committee on the Institute Journal showed the finances of said department in excellent condition, with a goodly balance on the right side.

The special Committee on National Legislation, James W. Ward, M. D., Chairman, reported that a special committee from the A. M. A. was in Pittsburgh at the present moment and desired a conference with our Committee. After the holding of said conference the Committee reported in substance that they advocated that the Government gather together all medical departments with the exception of Army and Navy, and that said departments should deal entirely with sanitation, hygiene and statistics. The report was practically an adoption of the Owen Bill with the exceptions noted.

The report of the Council on Medical Education showed all of our colleges in good standing and up to the legal requirements.

The report of the Intercollegiate Committee gave emphasis

to the fact that the percentage of decrease amongst the students attending homoeopathic colleges was materially less than that amongst those attending old school colleges. Not only has there been less percentage of falling off as compared with the old school, but there has been a material increase in the number of students over that of last year.

Relative to the work of the Committee on Pharmacopœia, Dr. J. Wilkinson Clapp of Boston, Chairman, the Institute passed the following vote:

Voted, that the Pharmacopœia Committee of 1912 be instructed to give special attention to the study of the question of revision of the Pharmacopœia and to report at the next meeting of the Institute such changes and additions as the Committee deem advisable, with a view to the publication in 1913 of a third and revised edition of the work, and that the Committee further consider the question of the advisability of eliminating the note on page forty-one on the "divisibility of soluble medicinal substances."

The following were elected officers of the Institute for the ensuing year:—

President W. B. Hinsdale, M. D., Ann Arbor, Mich.; first Vice-President, H. R. Stout, M. D., Jacksonville, Florida; second Vice President, M. Elizabeth Hanks, M. D., Chicago; Treasurer, T. Franklin Smith, M. D., New York; Registrar, W. O. Forbes, M. D., Hot Springs, Ark.; Secretary, J. Richey Horner, M. D., Cleveland, Ohio; Censor, Millie J. Chapman, M. D., Springboro, Pa.; Trustees: J. H. McClelland, M. D., Pittsburgh; T. H. Carmichael, M. D., Philadelphia; A. B. Norton, M. D., New York City.

The bureaux reports were all well rounded out and showed excellent work on the part of the respective chairmen. Were we to single out any one we should be compelled to mention the one in materia medica and general therapeutics, presided over by Dr. J. Herbert Moore of Boston. This bureau showed what painstaking effort can do to render a session intensely interesting and highly instructive. Twelve excellent papers were read and discussed in this Bureau.

The Bureau of Clinical Medicine, under Dr. B. H. Ogden, of St. Paul, was a close second to Dr. Moore's, both in interest and in value.

Dr. Charles E. Fisher made the Bureau of Homœopathy a strong factor because of the excellent essayists secured for the presentation of papers. When such men as McClelland, Boericke, Baxter, Copeland, Runnels, Rand, Walton, Hawkes and Cobb

read papers on Homœopathy there is something to be learned and emphasized on the old Law of Similars.

Pedology, under Dr. Wm. W. Van Baun, and Sanitary Science, under Dr. Sarah M. Hobson, each had a fine list of papers full of scientific interest. The discussion of race culture, sterilization of the unfit, compulsory reporting of venereal diseases, were illuminating both to the laity and to the profession.

The newborn Bureau of Dermatology and Genito-Urinary Diseases showed its fitness for immediate existence by having a splendid lot of papers presented and discussed.

Dr. John W. Wilson, under Neurology and Pschiatry, presented papers by such men as Amos J. Givens, Edward A. Everett, William M. Butler, George H. Martin, and R. M. Schley.

The Obstetric Society held two sessions, at which there were nine papers read and discussed.

The Surgical and Gynæcological Society held three sessions and had the remarkable record of presenting twenty-one papers actually read and discussed out of a possible twenty-seven scheduled. The newly elected officers of this Society are:

President, Henry C. Aldrich, M. D., Minneapolis, Minn.; First Vice-President, Rebecca George, M. D., Indianapolis, Ind.; Second Vice-President, Edgar R. Bryant, M. D., San Francisco; Secretary-Treasurer, J. W. Hassler, M. D., New York City.

The O. O. and L. Society showed an equal state of activity by presenting thirty papers. The officers of this Society for the coming year are:

President, George A. Shepard, M. D., New York City; Secretary, Dean W. Myers, M. D., Ann Arbor, Mich.; Treasurer, Albert E. Cross, M. D., Worcester, Mass.

The next Institute meeting will be held in Denver, Colorado, in June, 1913. Let us all begin to prepare now to go to the "Golden West" next June.

An invitation was presented from the Portland, Oregon, Society for the Institute to hold its 1915 session in that city in honor of the opening of the Panama Canal.

THE SOCIAL SIDE OF THE MEETING.

A company of physicians sufficient to occupy most of the seats of a Pullman parlor car left New York on the 10.04 train on Sunday morning, June 16, over the Pennsylvania Railroad, most of the party having travelled from Boston via the Fall River Line. A New York group occupied a second car on the same train, and an earlier train carried still more New Yorkers.

The journey to Pittsburgh was comfortable and pleasant and the scenery through the mountains of Pennsylvania (taking in the

famous Horseshoe Curve) wonderfully fine. A cloudburst and landslide just beyond Johnstown occasioned a delay of about two hours, and the delegation did not reach Pittsburgh in time to attend the memorial service on Sunday evening.

The sessions of the 1912 meeting were held in the Soldiers' Memorial Hall on Fifth Avenue, the splendid building erected by Allegheny County, at a cost of $1,500,000, to the memory of the soldiers and sailors of the Civil War.

On Monday evening occurred the formal opening exercises of the meeting in the Memorial Hall auditorium, with addresses of welcome by State and city dignitaries and Dr. Z. T. Miller, President of the Homœopathic Medical Society of Allegheny County, and a scholarly address by retiring President Dr. T. H. Carmichael. Following these exercises was a reception and ball in the spacious and beautiful ballroom of Hotel Schenley.

Too much credit and thanks cannot be given the Institute's host, the Homœopathic Medical Society of Allegheny County. No expense was spared to put every possible enjoyment into the week, and the most cordial hospitality was extended to the visiting physicians and their guests. The Hospitality and Entertainment Committees were indefatigable in their efforts to make the meeting a success socially as well as scientifically, and the results were most gratifying to the visitors and well calculated to inspire the wish to visit again the "smoky city beautiful." A toast to Pittsburgh and her hospitable and loyal citizens!

The Institute's selection of Pittsburgh was assuredly no mistake, for the city is truly wonderful, and its splendid buildings, wide boulevards, beautiful parks and fine homes, together with its tremendous industries, make it a most interesting place to visit. Weather conditions could scarcely have been more favorable, and the Institute headquarters were far enough removed from the coke and iron manufacturing districts to render "Pittsburgh smoke" a negligible quantity. In fact, except for those who chose to go where it was, the much advertised smoke was merely a feature of the landscape, looked down upon from the hills.

The resident members of the Meissen had prepared most effectively for entertaining the visiting wives and daughters of the Institute delegates, and the week was full of pleasure. On Tuesday a luncheon and card party was given at the Country Club, whither the guests were taken in automobiles, and in the evening a truly fine musicale by Pittsburgh artists was given in the beautiful Nurses' Dormitory of the Homœopathic Hospital, both of these buildings situated in one of the finest residential

sections of Pittsburgh. After a brilliant musical program, refreshments were served, and the occasion was most delightful.

On Wednesday afternoon the scientific sessions were suspended and a large company was taken in automobiles to the mammoth plant of the H. J. Heinz Company, manufacturers of the famous "fifty-seven varieties" of preserved goods, and there given a well served luncheon in the Company's fine auditorium, used for lectures and other social service work for the army of Heinz employees. After the luncheon the guests were taken on a tour of inspection through the many departments and great buildings of the plant, and to New Englanders especially the greatness of the enterprise, with its splendid equipment and efficient service, was a revelation of what a business can be. To all who were in the company the name Heinz will doubtless always recall a most enjoyable occasion and carry with it the assurance that the "fifty-seven varieties" are put up under the most sanitary conditions.

After the lunch and tour of inspection, the guests returned to the waiting automobiles and were taken for a long ride through the boulevards and beautiful parks of Pittsburgh. The city may well be proud of these, for they are certainly very fine.

Devotees of baseball and Institute members who did not take the trip to the Heinz plant had an opportunity to enjoy a game on the famous million dollar baseball park, Forbes Field, and still another group was taken for a visit to the Carnegie Institute, under the personal guidance of Director Martin G. Leisser. If one went to Pittsburgh merely to visit this magnificent structure, with its Art, Music, Library and Museum departments under one roof, it would be well worth the trip from any distance.

One of the most delightful features of the week was the automobile trip and tea at the home of Dr. and Mrs. Rinehart of Sewickley. The doctor's wife is Mary Roberts Rinehart, writer of "The Man in Lower Ten," "The Spiral Staircase," and several other popular novels, and their home, situated on the north bank of the Ohio River, is charming. The greater part of the ride there was over fine roads, through a most lovely country of succeeding hills and valleys, in all the beauty of June, with its verdure of grass and foliage and wealth of wild flowers. It was a day long to be remembered.

On Friday evening, June 21, occurred the annual banquet, held in the banquet room of Hotel Schenley. A large company, numbering about five hundred, filled the room and after enjoying itself gastronomically gave appreciative attention to the after-dinner speeches. The toastmaster was Dr. J. G. Palen of Philadelphia, and

the responses made by Dr. Edward B. Hooker of Hartford, Conn., Dr. H. A. Whitmarsh of Providence, R. I., Mr. D. G. Stewart, President of the Board of Trustees of Pittsburgh Homœopathic Hospital, Mr. John A. Brashear, Director of Allegheny Observatory and a noted astronomist and maker of telescope lenses, and Dr. M. Elizabeth Hanks of Chicago, whose response to the toast to the men was greatly enjoyed.

Many other delightful features of the week's program could be given, but to do so would make our report too long. Those who were there can recall them without help, and those who were not must draw upon imagination for what they missed.

The newly elected officers of the Meissen are: President, Mrs. Alonzo C. Tenney, of Chicago; Secretary, Mrs. William H. Phillips, of Cleveland; Treasurer, Mrs. Seymour B. Moon, of Pittsburgh.

Each year the fact is emphasized that the social side of our meetings is greatly enhanced through the presence of the physicians' wives, daughters and sweethearts. You cannot make any mistake in bringing one or all of such if you possess them.

INSTITUTE INCIDENTS

The "Boston Bunch" which went to the Institute "*en masse*" had a delightful journey, a cool day, an elegant parlor-dining-observation car train, good service, and, best of all, good fellowship.

The long-established custom of "taking your wife with you to the Institute" grows none the less popular. May it continue to grow, for the social feature which the addition of the ladies creates is no small factor in a successful meeting.

Get ready to go to Denver next June, get your wife and daughter ready, get your paper ready. Incidentally, put by a little money each day from now on until June, so as to have your ticket ready. Then be ready to go with the "crowd" in a special car on a special train, and thus make the trip one of the interesting features of the meeting.

OUR READING BUREAU.

The Hahnemannian Monthly, May, 1912.

Legislation.—Stewart, W. A.

The author contends that the medical profession has no right to form itself into a great political machine or trust for the sole purpose of controlling legislation and limiting competition; that an organization which has for its chief end the acquisition of arbitrary power is unquestionably contrary to public policy and cannot endure. He feels, however, that we should not always condemn the measures advocated by the dominant school and imagine that they are all framed with an ulterior motive. Most of the legislation recommended along the lines of sanitary science and preventive medicine is sound and should meet with our commendation. In regard to medical eduation: "Is it not a fact that all doubtful candidates sooner or later succeed in getting a license to practice? Is it not more rational to undertake to produce a better product rather than to devise means of keeping those who are poorly prepared out of the profession? A college education is not necessary for a physician, but the work done preparatory to entrance to the medical school should be along lines which lead toward medicine. The first three years in the medical school should be didactic, and the fourth and fifth years should be devoted to clinical work including applied homœopathy.

The Limits to the Scope of the Homœopathic Remedy.—Howard, E. M.

In this paper the author shows how the pioneers in homœopathy were led to claim a far wider scope for our law of cure than later experience and more definite knowledge can substantiate; that their enthusiasm for their apparently wonderful cures is quite excusable when we consider the darkness of the medical age in which they lived. The motto of the ancient physicians, *tolle causam*, so strongly emphasized by Hahnemann, should always be considered before the law of similars; consequently it is evident that the homœopathic remedy is not applicable when there exists a distinct mechanical or chemical cause. Such causes must be removed before any curative action can be supposed, or the law of homœopathy be given any consideration. The old school has but little faith in use of drugs that cannot be justified upon pharmaco-mechanical grounds, and although they explain the action of quinine in malaria and mercury in syphilis on the ground that these drugs destroy the invading organisms, the homœopath sees in these cures a splendid illustration of the law of similars, i. e., the pharmaco-dynamic effect of drugs. The use of drug forces for the production of definite mechanical or chemical effects is of great value to humanity when wisely guarded, and belongs equally to all practitioners of the healing art. The great mass of functional diseases, from whatever standpoint we may view them, will always need homœopathic medication. It is still uncertain how far bacteriological study will limit the homœopathic field of cure. If there be a removable cause, the real physician must determine what agent is best to remove it, whether it be physical, or surgical or medicinal, and by so doing he is not disloyal to homœopathy but honoring it by accurately outlining its scope.

A Consideration of Lacerations of the Perineum, Immediately Following Labor.—James, J. E. Jr.

Causes of lacerations.—1. Rigidity of perineum, as found in young and elderly primiparæ, and in cases with extensive scar tissues from previous injuries. 2. Faulty mechanisms. 3. Hasty delivery. 4. Oversize of the presenting part. 5. Obstetrical operations. Means of prevention: — 1. Ample time for dilation and expansion. 2. Secure and maintain normal mechanism. 3. Delivery in the side position. 4. Delivery between "pains," when then, involuntary spacticity of the perineal structure will be absent. Always look for an internal tear. The author is in favor of imme-

diate repair, and advises against pulling the sutures tight where there is swelling of the tissues. He also advocates the immediate secondary repair, referred to by Horst as the "intermediate" operation, and that this should be done before the patient is out of bed and as soon as a healthy granulating area can be secured. "This operation applied to cases which are compelled to wait for repair, after birth, and to those where we are unfortunate enough in having our stitches slough."

The Thermocautery Treatment of Inoperable Carcinoma Cervisis Uteri and its Results.—Gramm, T. J.

Carcinoma of the cervix is so rapid in its progress that when many patients present themselves, a large number of them have already passed beyond the time for the radical operation; the cautery should then be persistently used and resorted to. Contrary to all expectations, many of these cases, so treated, have remained well for a surprisingly long term of years; moreover, many cases are recorded in whom after this treatment, the lateral involvement has so far disappeared as to make the radical operation not only possible, but successful.

Some Vague Liver Diseases.—Smith, C. H.

The Use of Salvarsan in Syphilis.—Kenworthy, J. M.

Considerations of indications, contraindications, methods of administration, sequelæ, dosage, after-treatment, results. Report of 52 cases, where it was injected intravenously with favorable results, at the Hahnemann Hospital. *C. W.*

North American Journal of Homœopathy, June, 1912.

Medical Education.—Braswell. R. O.

"Sectarian medicine has done much towards the uplifting of the science of medicine, because it created rivalry between men and factions, and each faction tried to excel the other, and in so doing brought forth precious scientific principles, but the time has now arrived when there must be a coming together of scientific men. "The preliminary and fundamental principles of homœopathy are the common grounds that the future edifice of the medical world will stand upon; serum therapy, 'like cures like'."

Note. The author is a member of the dominant school. The editor after an admirable editorial on the paper says, "We welcome Dr. Braswell as a contributor to the *North American*; we admire the spirit of fairness which breathes through his remarks; and we should agree with his conclusions if we thought his premises were well taken. The mistake he has made is in identifying serum therapy with homœopathy. We hope what we have said may lead him to head a movement in the ranks of his own school for a fair, impartial, exhaustive investigation of homœopathy. The organized homœopathic school courts such an investigation fearless of the results. Until it is made, the homœopathic school still has a mission."

What May be Learned by Observation after the First Prescription.—Bidwell, G. I.

Syphilis of the Spinal Cord.—Brady, E. F.

"Syphilitic inflammation affects primarily the mesoblastic tissues of the nervous system, that is, the membranes and the blood vessels. The lesions of syphilis are accompanied by a formative exudation or deposit. The exudation may embrace all three of the membranes, or it may be limited to the pia and arachnoid. Syphilitic inflammation of the dura is generally diffuse, while in the pia and arachnoid, local gummatous deposit is most apt to take place." "The characteristic symptoms present when the meninges are attacked consist of pains in the back, hyperesthesia and a marked nocturnal aggravation. Implication of the posterior roots produces radiating pains, girdle pains and neuralgia. When the anterior roots are attacked in the cervical and lumbar regions there ensues paralysis, with atrophy of the extremities confining itself to a few muscles." The cardinal treatment for cerebral syphilis is mercurius and kali iodide in large doses. In-

dications for aurum, arsenicum iodide, asafœtida, berberis and mezereum. Like all new remedies "606" is perhaps lauded beyond its worth, and there will ensue a reaction against at least its indiscriminate use.

The Use of Typhoid Vaccines.—Jewett, D. B.

1. That in administering the typhoid vaccine, we do produce an active immunity. 2. That the dead bacilli undergo dissolution at the point of injection, setting free their endotoxin which is believed to locally produce antibodies. 3. That dead cultures of the typhoid bacilli have been proved experimentally to produce an increase of bactereolysins, agglutinins and opsonins. The author believes that a stock vaccine made from many different strains is as efficacious as an autogenous vaccine; that the dose should not be repeated if the patient is progressing in a satisfactory manner. At the Rochester Homœopathic Hospital in 1911 there were 25 cases of typhoid; to these are added cases from the author's private practice. Fourteen received vaccine where the mortality was 7.1 per cent, thirteen received no vaccine where the mortality was 23 per cent. The vaccine was supplementary to other treatment. The author has collected 280 cases from 18 authors where vaccine has been given. The mortality percentage is 6 per cent. The author concludes that although the use of typhoid vaccine is thus far encouraging, it is unwise to draw any conclusions regarding its value at present, since the mortality of the disease varies greatly from year to year.

Medical Inspection of Schools.—Barrows. F. W.

C. W.

The British Homœopathic Journal, June, 1912.

Plumbums.—Stoneham, J. G.

Toxicology, therapeutic indications, cases. An elaborate and valuable essay covering 24 pages.

Anœsthesia—Some Historical Points.—Powell, J. C. *C. W.*

The American Journal of Obstetrics and Diseases of Women and Children, June, 1912.

Toxœmia of Pregnancy.—Brown, W. M.

"In the past it was thought that the convulsion was what killed the patient, and we were taught to control the seizure at all cost and many poisons such as chloroform, morphine, hyocin, chloral, etc., were added to those already in the circulation." Until we know the causative toxin we must be without a specific antidote. The products of cellular lysis account for the extreme gravity of the disease, and if we can find some way to prevent further cell destruction, and provide suitable food we may expect an advance in the treatment. Report of a case of pernicious vomiting which recovered after the administration of 30 grains of calcium lactate. The author then reports a case of post-partum eclampsia to which he gave veratrum. This brought down the pulse and the blood pressure, whereupon he gave 1-30 of a grain of strychnine, which was probably as well indicated as 30 grains of urea,—(he did not give the latter), and as the patient continued to fail an intravenous of 30 ounces of warm saline was given. The patient recovered. The author is a firm believer in free catharsis, and objects to Cæsarian section in eclampsia because it interferes with this procedure. The reviewer asks how active catharsis can be accomplished without adding more poisons "to those already in the circulation."

Melena Neonatorum.—Boyd, G. M.

Report of a case to which serum taken from the blood obtained from the cord of a recently delivered placenta was administered hypodermatically. Recovery.

Thyroid Physiology in its Relation to Pregnancy.—Beebe, S. P.

Experiments have shown that thyroid function varies and increases during pregnancy. In cases of Grave's Disease, when pregnancy

developed, the patients were usually better during their pregnancy than before. Patients who were myxedematous were not likely to go through pregnancy; they were likely to suffer from the toxæmias of pregnancy.

Pacific Coast Journal of Homœopathy, June, 1912.

Report on the Cases Treated in the Homœopathic Ward of the San Francisco Hospital from May 15, 1911, *to May* 15, 1912.—Visalli, J.

Number of cases: Medical 85. Surgical 109. Gynæcological and Abdominal Surgery 31. Eye, Ear, Nose and Throat 11. Genito Surgery 21. Rectal 6. Obstetrical 21. Total admissions 705. *C. W.*

The Homœopathic World, June, 1912.

The Hahnemann Explanation of the Mode of Action of the Homœopathic Remedies.

A few thoughts advanced, not in any critical spirit, in regard to the strength of the medicinal morbific agent as contrasted with that of the disease, with special reference to Hahnemann's ideas on the subject expressed in the Organon.

Analogies, Physical and Social.—Smith, G.

The Rise and Progress of Homœopathy in Liverpool.—Wheeler, F.

Homœopathic Hospitals and Their Significance in the Cause of Public Health.—Hoyle, E. P. (U. S. A.)

The Medical Advance, June.

The Homœopathic Diet.—Woodbury, B. C.

The author urges that aggravations and ameliorations from the various articles of food and drink be given more consideration in our Materia Medicas.

Thuja Occidentalis.—Hudson, T. H.

Medication During Parturition.—Rabe, R. F.

Homœopathic Treatment during Lactation.—Stevens, G.

BOOK REVIEWS.

The demand for "Boericke's Materia Medica" was so great that the 4th Edition was inadequate to meet it. The 5th Edition, thoroughly revised, up to date, with many new additions, is now in press, and will be ready for delivery September 1st. Price $3.50 per copy. Order direct of the publishers, Boericke & Runyon, 14 West 38th Street, New York City.

Journal Belge d'Homœopathie, March, April.

Similarities of the Remedial Toxines and other Homœopathic Remedies.—Calis, M.

Some Heart Remedies.—Hoorens, A. *C. W.*

SOCIETIES.

The International Hahnemannian Association

The thirty-third annual meeting of the International Hahnemannian Association was held at the New Ocean House, Swampscott, Mass., on June 24, 25 and 26. A long and interesting program was presented, under the following physicians as Bureaux Chairmen:

Homœopathic Philosophy, Maurice Worcester Turner, M. D., Brookline, Mass.

Materia Medica, Frank W. Patch, M. D., Framingham, Mass.

Clinical Medicine, M. Florence Taft, M. D., Newtonville, Mass.

Obstetrics, Frances M. Morris, M. D., Boston, Mass.

Surgery, Henry L. Houghton, M. D.

The following officers were elected for the ensuing year:—President, J. B. S. King, M.D., Chicago, Ill.; Vice-President, Julia Minerva Green, M. D., Washington, D. C.; Secretary, Frank W. Patch, M. D., Framingham, Mass.; Treasurer William R. Powel, M.D., Philadelphia, Pa.; Corresponding Secretary, P. E. Krichbaum, M.D., Montclair, N.J.

Place of next meeting, Chicago, Illinois, June, 1913.

Massachusetts Surgical and Gynæcological Society.

The seventy-eighth session of the Massachusetts Surgical and Gynæcological Society was held at Robert Dawson Evans Memorial Building, Boston, on Wednesday, June 12. The program consisted of the "Report of Bureau of Surgery," Clarence Crane, M.D., Chairman; Dana F. Downing, M.D., Secretary.

"A Review of Surgical Progress for the Year." Clarence Crane, M.D. Discussion opened by Charles T. Howard, M.D.

"Cases." W. F. Wesselhoeft, M.D. Discussion opened by W. Smith, M.D.

"Experiences with Cases of Subdeltoid Bursitis." Alonzo G. Howard, M.D. Discussion opened by J. W. Schirmer, M.D.

"What Has Surgery to Offer in the Treatment of Persistent Vomiting in Infants? (Illustrated by Stereopticon.) Charles L. Scudder, M.D. Discussion opened by John Lovett Morse, M.D.

Marine Plasma Therapy, or the Use of Sea-water in the Treatment of Diseases by Injection Subcutaneously, by Bernard S. Arnulphy, A.M., M.D., of Paris.

The use of sea water by substituting it for blood lost in hemorrhage, and advantages which it may possess chemically or medicinally as a cure in marasmus in infants, malnutrition in adults, as well as in those diseases attended by watery stools, and toxæmias, was considered in detail. A number of photographs were shown and the cases described which were conclusive in substantiation of improvement while under the marine plasma treatment. The method of obtaining the sea-water and its preparation, if any, were not described. Its usual method of administration was by subcutaneous injection between the shoulder blades.

Dinner was served at Young's Hotel, with the following post prandial program:

Toastmistress, Mary E. Mosher, M.D.
Bureau of Surgery: the Aftermath

Diet

Food	Rice (Doctor G. B.)
Diet	Watters (Doctor W. H.)
Exercise (Passive.)	
Trip in a Boat	Miss Isabelle J. E. Stevens
Adjuvants	
Electric Sparks	Dr. Frank C. Richardson
General Tonic	Tout ensemble

The New Hampshire Homœopathic Medical Society

The fifty-ninth annual meeting of the New Hampshire Homœopathic Medical Society was held at the Eagle Hotel, Concord, on Friday, May 31. The meeting was well attended and an interesting and highly instructive program was carried out. The regular Business Session was held in the forenoon, at which time five new members were elected, as follows:

Fred S. Eveleth, M.D., Concord; Frank B. Foster, M.D., Peterboro; Dana B. Mayo, M.D., Somersworth; Katharine E. McCarty, M.D., Dover; Bertha L. Cameron, M.D., Manchester. Resolutions were adopted upon the deaths of Dr. A. W. Hill of Concord and Dr. A. H. Kempton of Newport.

Credentials were received from Dr. Eveleth, as delegate from the Massachusetts Homœopathic Society and from Dr. Woodbury, from the Maine Homœopathic Medical Society.

The following officers were elected for the ensuing year: President, C. A. Sturtevant, M.D., Manchester; Vice-President, L. R. Clapp, M.D., Farmington; Secretary, B. C. Woodbury, M.D., Portsmouth; Treasurer, H. Christophe, M.D., Manchester.

Censors: R. V. Sweet, M.D., Rochester; C. Bishop, M.D., Bristol; A. J. Todd, M.D., Manchester.

Examining Board: George R. Smith, M.D., Dover, President; C. Bishop, M.D., Bristol, Secretary; R. V. Sweet, M.D., Rochester.

Recommended to the Governor for Examining Board: George R. Smith, M.D., B. C. Woodbury, M.D.

Legislative Committee. George R. Smith, M. D., F. S. Eveleth, M. D.

Delegate to the Annual Meeting of the A. I. H., W. C. E. Nobles, M.D.

The Afternoon Session was devoted to the reading of the following papers:—"Rheumatic Iritis," by W. C. E. Nobles, M.D., Littleton; "Practical Points in Surgery," by Charles T. Howard, M.D., Boston, Mass.; "Infantile Paralysis," by B. C. Woodbury, M.D., Portsmouth; "Arterial Sclerosis," by J. P. Sutherland, M.D., Boston, Mass.

Dr. Nobles, in his paper on "Rheumatic Iritis," emphasized the importance of care in making a diagnosis, also in discriminating between the cases which are clearly rheumatic, and that form of iritis due to specific infection. He then discussed its pathology, clinical symptoms and indications for remedies, also for performing iridectomy. The practical point the reader of this paper particularly called attention to, was his opinion that the ordinary case of iritis could in the majority of instances be safely and successfully treated by the general practitioner, whereas, only complicated cases should of necessity be referred to the specialists.

Dr. Howard's paper on "Practical Points in Surgery" proved to be one of exceptional interest and was discussed at length. The writer detailed in a careful way the preparation of the patient for operation, emphasizing in this connection the use of Iodine as applied to the field of operation; the treatment of post-operative nausea and vomiting; his original method of ligating the broad ligament by the use of the continuous button-hole stitch; the use of a modification of the cuff method of inverting the appendix by the use of the Lambert suture; the closure of the abdominal wound by the use of iodized-catgut, also the use of skin clips in abdominal and superficial skin and face wounds; the treatment of post-operative intestinal paralysis; and finally, he discussed the question of rapid operating, as emphasizing the advantage of the greatest speed consistent with good work.

"Infantile Paralysis" comprised the report of a few cases of the disease, and a resume of "Summaries and Conclusions based upon the reports of the Mass. Epidemics for the years (1907-1910). On the whole, a paper designed to emphasize the clinical aspects as presented to the general practitioner.

The paper on "Arterial Sclerosis" included the general subject of arterial tension and hypertension, its physiological and pathological significance, causes, diagnosis and treatment. It is safe to say that few speakers upon this much discussed subject could by any possibility have proven more interesting and even entertaining than did Dr. Sutherland. The physiology of normal blood pressure was carefully considered, its pathology very ingeniously illustrated (that is to say, the pathology of arterio-sclerosis), and the technic of the various instruments in present use. The speaker emphasized especially the variation in blood pressure even in the healthy, by charts obtained from tests upon students prior to an experimental proving of cratægus made during the past winter at the Medical School. As to the significance of high blood pressure, it was emphasized first of all that we should never conclude from one test or reading of the arterial tension as to whether its average is high or low, but from repeated confirmations; and finally, it should be looked upon as but one of a complex of symptoms, and the diagnosis as well as the prescription should be made according to the well known aphorism of Homœopathy, upon the "totality of the symptoms."

A banquet followed at 6.30. Ample opportunity was offered at this meeting for exchanges of friendship and good will, for the many expressions of interest in Homœopathy and for observation of the increasing interest being manifested by this Society, its healthy growth, and its steadfast allegiance to the cause for which it stands.

B. C. Woodbury, M.D., Jr., Secretary.

COMMENCEMENT WEEK AT BOSTON UNIVERSITY.

A reception given by President and Mrs Murlin at Hotel Vendome to the Trustees and Faculties, Wednesday May 29, ushered in the functions of Commencement Week at Boston University. The Faculty of the School of Medicine was well represented at this reception, and a very pleasant afternoon was thus spent.

The Baccalaureate Service was held on June second in the Old South Church, Copley Square. The program included the invocation by Dean L. J. Birney of the School of Theology, scripture reading by Ex-President Warren, and sermon by President Murlin.

The service was preceded by an academic procession from the College of Liberal Arts to the church, in charge of the University Marshal, Professor E. Charlton Black. Each Department of the University was well represented, nearly five hundred persons taking part in the procession. The School of Medicine was represented by the graduating class and thirteen members of the Faculty.

The church was filled to overflowing. President Murlin's sermon, instead of the trite and time worn baccalaureate order, was on a theme worth while, a source of inspiration to all. It was the consensus of opinion of those present as well as of the Boston press that this was the best attended and most successful baccalaureate service ever held by the University.

Among those who occupied seats on the platform were Chancellor John L. Bates, Deans J. P. Sutherland and W. M. Warren, Acting Deans A. R. Weed and J. B. Coit, and Justice A. P. Rugg.

On the evening of Monday, June third, occurred the Class Day Exercises of the Class of 1912 of the School of Medicine, followed by the Faculty reception. The formal exercises were held in the auditorium of the Evans Memorial, an exceedingly comfortable and satisfactory substitute for the amphitheatre of former years.

Mr. Forrest J. Drury for the class read the Class History and prophecy. This was in case form with the class as a hypothetical patient and presented in very clever and ingenious fashion the life of the class during its laborious progress through the School, as well as the probable fate of each member.

In introducing the valedictorian of the Class, Miss Marion Shepard, Dean Sutherland congratulated her and the School upon her high scholastic rank. After taking the fifty-one examinations of the four years Miss Shepard obtained sufficiently high rank to enable her to be graduated *cum laude*, the only student to obtain that honor within the last seven years.

Miss Shepard's valedictory was excellent in every way, showing marked appreciation by the class of the efforts of the Faculty in its behalf and pledging loyalty to the School and its high ideals.

The response for the Faculty was given by Associate Professor Nelson M. Wood, who had given courses to the class in three of the four years. Professor Wood's remarks were of high order and expressed very well indeed the close and intimate relation that exists between Faculty and student body in the School of Medicine.

President Murlin was present, was introduced amid much enthusiasm, and with face illumined by the "smile that won't come off," made one of his genial and heart-warming speeches of the get-together and unified-University order.

The exercises in the Memorial were followed by the Faculty Reception in the Microscopical Laboratory of the School. President and Mrs. Murlin were at the head of the receiving line and remained till late in the evening.

At six o'clock, Tuesday, June fourth, occurred the first formal meeting of the Boston University Alumni Association in Isaac Rich Hall of the School of Law. The meeting was not largely attended because of its novelty, but each Department of the University was represented. The

Medical School contingent comprised Professors E. E. Allen and N. M. Wood, and Dr. D. F. Downing.

This Alumni Association, distinct from the University Convocation yet not interfering in any way with that body, is designed to bring together the alumni of the University for concerted effort in whatever direction thought best but especially to enable the alumni to vote for certain of the Trustees as vacancies occur. Voting membership is to be obtained by any graduate of the University by the payment of one half-dollar for the current year. Life membership may be obtained by the payment of ten dollars at any one time. The alumni of the School of Medicine, who have always wished more voice in University matters, through their membership in this Association can have their proper share in the nomination of University Trustees.

At seven o'clock at Young's Hotel occurred the annual meeting of Gamma Chapter of the Convocation, the Alumni Association of the School of Medicine. After dinner speeches were made by President S. E. Fletcher, Dean Sutherland, Registrar Richardson and Dr. Helen F. Pierce of the class of 1887. Dean Sutherland announced that the Graduate School Faculty had voted to recognize the work done in the School of Medicine as equivalent to the first degree in Arts as far as the work required for the degree Doctor of Philosophy is concerned. The entrance of President and Mrs. Murlin in the middle of the speech-making was a signal for enthusiasm which was shown by all rising and indulging in vigorous hand-clapping. The President responded with a happy and constructive speech, assuring the alumni of his interest in the School of Medicine as an integral part of the University and in each graduate, congratulating the alumni on the high standards which would lead the Graduate School to accept work done in the School of Medicine as counting toward its highest degree.

Wednesday, June fifth, was as perfect a Commencement Day as one could wish. The Trustees, guests, and Faculties assembled in Gilbert and Lorimer Halls in Tremont Temple. The procession was formed at ten-fifteen o'clock and proceeded to Converse Hall, the large auditorium of the Temple. The Reverened Alexander Mann, Rector of Trinity Church, Boston, delivered the Commencement oration. After speaking felicitously of the close relation existing between Trinity Parish and Boston University and his own appreciation of his personal acquaintance with Boston University and President Murlin, Dr. Mann delivered a splendid address on the Power of Praise. He deprecated the extremely critical tendencies of the times and recommended the spirit of constructive optimism.

The address over, President Murlin, in the name of the Trustees and the University Senate, conferred upon two hundred and fifty-eight candidates from the departments the appropriate degrees and presented to each a diploma. In the School of Medicine degrees were conferred as follows: Bachelor of Surgery (Ch. B.), Messrs. D. L. Belding, S. B. Hooker, A. W. Moore, and C. A. Powell; Doctor of Medicine (M.D.), Misses Hafiza Ameer, Gladys H. Brownell, Harriet J. Lawrence, Frances Low, Elizabeth Ross, Marion Shepard (*cum laude*), and Messrs. E. W. Coates, F. J. Drury, C. L. Henkin, D. S. Hepburn, W. B. Howes, E. D. Lane, J. K. Miller, A. E. Mills, M. H. Paull, R. A. Pierce, N. R. Sylvester, Jr., and W. R. Young.

The Commencement luncheon followed the Exercises. This in turn was followed by the annual meeting of the University Convocation, President, Dean William M. Warren in the Chair. Dr. Wesley T. Lee, representing the Alumni of the School of Medicine (Gamma Chapter), in a very original and witty speech such as only Dr. Lee can make, welcomed the newly made M. D.'s to the Convocation. Dr. Reuel A. Pierce of the class of 1912 made the response for the class. During the meeting it was announced that the choice of Gamma Chapter for the office of Honorary Vice-President of the Convocation for the current year was J. Emmons Briggs, M.D., 1890.

At three-thirty in the afternoon occurred the unveiling of the alumni portrait of Ex-President William F. Warren at Jacob Sleeper Hall, College of Liberal Arts. At these exercises Professor E. Charlton Black and others spoke in praise of the life and work of the intellectual founder of the University, former President Warren.

Thus passed the first Commencement Week under the leadership of President Murlin. It was successful in every way. The interest and loyalty of the Alumni and Faculty of the School of Medicine in the affairs of the University was apparent as never before. The President has already found a place in the hearts of those of us who have come to know him. We bespeak for him and his administration every assistance which we as graduates of Boston University may render. D. F. D.

PHILADELPHIA NOTES.

Hahnemann Medical College of Philadelphia held its commencement exercises and its annual alumni reunion on Thursday, June 6. Thirty-five students were graduated and the event brought together hundreds of old Hahnemann students who are now practicing physicians in all parts of the United States. The commencement exercises were held in the Academy of Music, at 11.30 o'clock, and were followed in the evening by the Alumni banquet at the Bellevue-Stratford, at which the new graduates became real alumni of Hahnemann.

The Alumni officers and the Special Committee of Arrangements which were co-operating with the Faculty of Hahnemann, had prepared a great celebration this year. Old alumni from far-away points came to the reunion, and among them were many members of the classes of 1882, '87 '92, '97, 1902 and 1907, for these, following the old Hahnemann custom of reunions every fifth year, joined with the new alumni of 1912, in the celebration.

The festivities started Wednesday evening with an alumni smoker in the Fountain Room at the Continental, which was attended by from two hundred and fifty to three hundred of the graduates. Class reunions were held, and there was a vaudeville entertainment and supper.

Clinton Rogers Woodruff presided at the commencement exercises next morning. The degrees were conferred by Charles D. Barney, president of the Board of Trustees, and Dr. Wm. B. Van Lennep, dean of the college, announced the list of prize winners. Rev. J. Thompson Cole, of Elkins Park, offered the invocation, and there was an organ recital by Ellis Clark Hamman.

Doctor Louis Plummer Posey acted as toastmaster at the Alumni banquet, which was held at the Bellevue-Stratford at 6.30 in the evening, and at which Rev. Dr. David M. Steele was the principal speaker.

Doctor Wm. H. Keim delivered an address as president of the Alumni Association, and Doctor Gilbert J. Palen as president of the State Society of Alumni. Others who delivered addresses were Dr. D. P. Maddux, of Chester, a member of the Bureau of Medical Education and Licensure, and William J. Brooks, valedictorian of the class of 1912.

The officers of the Alumni Association under whose direction the celebration was planned, were Dr. Wm. Keim, of Philadelphia, president; Robert Pip-r, of Tyrone, Pa., first vice-president; Doctor John R. Fleming, of Atlantic City, second vice-president; Dr. Richard Larer, third vice-president; Dr. Edwin L. Nesbit, of Bryn Mawr, corresponding secretary; Dr. Wm. C. Hunsicker, provisional secretary, and Dr. Wm. W. Van Baun, treasurer.

PERSONAL AND GENERAL ITEMS.

Dr. Emily Metcalf Richardson, class of 1877, B. U. S. M., died on January 15 of hemorrhage of the brain.

Dr. Conrad Smith has removed from 279 Dartmouth St., to 143 Newbury St., Boston.

Dr. Esther S. Barnard-Woodward, class of 1900, B. U. S. M., has resigned her position at Westborough State Hospital to take the position at Norwich (Connecticut) State Hospital made vacant by the resignation of Dr. Jennie G. Purmort. The Connecticut position pays a thousand dollars salary more a year than that at Westborough.

Dr. Emma H. Fay, B. U. S. M., class of 1909, has been appointed assistant physician at Westborough (Massachusetts) State Hospital, as has also Dr. Reuel A. Pierce, class of 1912.

Dr. C. C. Burlingame has resigned from Westborough State Hospital to accept, at a largely increased salary, appointment at Fergus Falls (Minnesota) Insane Hospital.

Dr. Everett W. Coates, of the class of 1912, B. U. S. M., is to be associated in practice with Dr. Stephen H. Blodgett, at 419 Boylston St., Boston; specialty, urinary diseases.

Dr. Mara L. Pratt Chadwick, class of 1889, B. U. S. M., is at the Muncie Sanitarium, Macon St., Brooklyn, N. Y.

Dr. Harry W. McElman, class of 1910, B. U. S. M., has given up private practice in Waltham, Mass., and has accepted appointment at Dr. Styles Sanitarium, New Britain, Connecticut.

The GAZETTE announces with regret the death of Mr. Thomas Doliber, which occurred on June 5. Mr. Doliber was President of the Mellin's Food Company and founder of the business, and his connection with the company covered a period of nearly forty years.

The University of Michigan, in bestowing honorary degrees at its 68th annual commencement last month, honored Dr. James C. Wood of Cleveland, Ohio, by conferring upon him the degree of Master of Arts. Dr. Wood was formerly a member of the Faculty of the Homœopathic Medical College of the University of Michigan. He is now on the Faculty of the Cleveland-Pulte Medical College of Cleveland, an eminent gynæcologist and author of a well-known work on gynæcology, and past president of the American Institute of Homœopathy. The GAZETTE sends its cordial congratulations and good wishes. May the honors continue to go to Dr. Wood!

Word has reached us of the recent death of Dr. J. E. Luscombe, a graduate of Boston University School of Medicine, class of 1885. Dr. Luscombe had been in practice in Fitchburg, Mass., for twenty-seven years.

Dr. Horace Packard is summering at Kineo, Moosehead Lake, Maine, and expects to return to Boston in September.

Dr. M. Elizabeth Hanks, class of 1897, B. U. S. M., has been elected Second Vice-President of the American Institute of Homœopathy.

Dr. Amos J. Givens of Stamford, Connecticut, has just been awarded the degree of LL.D., by Wesleyan University. The degree was also given to President Lemuel H. Murlin of Boston University.

Dr. Edgar F. Haines, class of 1906, B. U. S. M., is located for the present in Case Hospital, Tientsin, China, in the medical service of the United States Army.

FOR SALE.—A $3,000 practice in a beautiful Cape Cod town of 3,500 inhabitants. Good reasons for selling. Address "A. B. C.," care New England Medical Gazette, 422 Columbia Road, Boston, Mass.

Dr. Ward Irving Pierce, B. U. S. M. 1904, and Dr. Lydia Baker Pierce, B. U. S. M. 1906, of Pittsburgh, Pa., sailed from New York on July 3 en route for Vienna, where they will both take special courses in diseases of the ear, nose and throat, returning to Pittsburgh about September.

Dr. Elizabeth Ross, of the 1912 graduating class of B. U. S. M., is to be in charge for the summer of the Convalescent Camp for Children conducted under the auspices of the Boston Traveler Charitable Society, at South Framingham, Massachusetts.

Dr. Merle H. Paull, B. U. S. M., 1912, is to be assistant physician at the Arlington Health Resort and Ring Sanitarium, Arlington Heights, Massachusetts.

Dr. William Rae Young, of the 1912 class, B. U. S. M., has received appointment at Minnesota State Hospital, Fergus Falls.

Dr. William C. Harmount is in practice at 125 South Lang Avenue, Pittsburgh, Pa.

Dr. Irving W. Slack has just completed his year's interneship at the Massachusetts Homœopathic Hospital and has located at 2540 Pawtucket Avenue, East Providence, R. I.

Dr. Elwin D. Lane, B. U. S. M., 1912, is substituting for Dr. Charles S. Cummings of Middleboro, Massachusetts, for the summer.

The *Gazette* regretfully announces the death of Dr. Henry E. Spalding, which occurred on July 4. An obituary notice will appear in a later issue. Dr. Spalding's article on Radium in this number of the *Gazette* was probably his last effort, his "valedictory to the medical profession," as he called it.

ARTIFICIAL FIRE EXTINGUISHERS.

A short article upon the above topic by Young, one of the state chemists of Kansas, appeals to us as a very practical and attractive production. In this article he says:—

"It is a very common thing in buildings, especially in small towns and rural districts, to see a long tube, filled with dry powder, hung on the wall, labeled in lurid colors, "fire extinguisher," no thought being held as to its efficiency as a means of protection against fire.

"It has been the fortune of the writer to examine the contents of some of these contrivances, and in every case which has come to his notice the basis of the powder has been baking soda or soda ash. Experiments have shown that the dry fire extinguishers (the only protection against fire in many buildings) are of no more value for putting out fire than a small coal-shovel full of ashes. A New York chemist was very much impressed with a demonstration in which the salesman for the extinguisher company poured a thin stream of benzine on the floor, ignited it and then put the fire out with the dry powder. The chemist went home somewhat perplexed, but found that with a little practice he could do the same trick with a quart cupful of sand, salt or fine dirt, dexterity being the secret of the salesman's success.

"The type of extinguisher that will insure protection in a measure is the soda-water extinguisher. This consists of a copper cylinder filled with a solution of soda in water. A bottle of acid is so arranged that, upon turning the apparatus upside down, the contents of the bottle is spilled into the soda solution, and a strong pressure, due to the liberation of carbon dioxide, is obtained, thus forcing the water out of a short hose that is connected to the bottom of the cylinder. By this means a small stream of water can be directed very nicely upon the fire.

"We recommend to anyone depending upon a dry fire extinguisher for protection that they throw it in the rubbish heap and install the soda-water type or pails of water."—The Dietetic and Hygienic Gazette.

HOSPITAL FLOORS.

We read in the Oklahoma Medical News-Journal an article upon "The Aseptic Hospital Floor," by Fox of Washington. While this may not be the subject of great interest to many of our readers, it is one that in some of its phases may appeal. The writer among other things speaks as follows:—

"After examining all of the proposed floor materials, it must be admitted that the best so far discovered is the floor of baked clay tile, which consists principally of silicate of alumina, and is an inorganic substance which attains a greater hardness than almost any natural stone. It is so hard that a sharp steel point cannot scratch it, but merely makes a mark like a lead pencil. As a silicate of alumina, it cannot be attacked by any acid, with the exception of hydrofluoric, which there is no occasion to use. As vegetable growths require nothing in the way of clay for their development, the clay tile is absolutely sterile as far as they are concerned. There has been much said about the cracks, or joints between the tile, but these are completely filled with pure cement grouted in hard so that the joint is but a joint in appearance and not in the sense of the open or unfilled joints of the wooden or rubber tile floor."

TUBERCULIN IN TUBERCULOUS LYMPH-NODE.

Hawes in the Boston Medical and Surgical Journal contributed a very full paper upon the use of tuberculin in treatment of tuberculous adenitis. In the beginning he has several fundamental propositions concerning the treatment, which are worthy of note. They are therefore quoted:—

"1. In tuberculous adenitis we are dealing with an infection with the tubercle bacillus; to combat this it is necessary not only to treat the local process in the patient, but, of far greater importance, to treat the patient himself.

"2. To get good results, the portals of entry for the infecting organism must be closed, and all sources of infection or irritation removed. In other words, there must be careful attention paid to teeth, tonsils and adenoids.

"3. The so-called "radical operation" is comparatively rarely indicated; in many cases no surgery is called for; when surgical interference is necessary, it should be regarded merely as a step in a course of treatment the most important part of which comes before and after the operation.

"4. The broad-minded physician will not claim that surgery alone, hygiene alone, or tuberculin alone, will cure tuberculous adenitis, but he will use each and all of these three methods of treatment according to the needs of the individual patient. Above all, he will remember that he is not only treating a case of tuberculous glands, but is dealing with a human being infected with tuberculosis. The difference between the two points of view is enormous, and success will largely depend upon the one chosen by the physician."

He then gives the following summary as his opinion formed from results from his series of cases:—

"1. To get good results in the treatment of tuberculous adenitis I believe it to be more important to treat the patient than to devote one's attention solely to the tuberculosis process in the glands.

"2. The physician should not depend upon surgery alone, hygiene alone or tuberculin alone, but should use all or each of these measures as is required by the individual patient.

"3. Out of this series of 56 patients treated according to the methods here described, in 27 the disease has been apparently cured or arrested, while in 16 others the condition of the patient has been improved, while the number of cases in which there was no improvement after a fair trial was very small indeed.

"4. I believe it to be essential to succcess that patients should be treated in a special department, such as the one here described, entirely distinct from the other departments of the hospital and yet working in the closest co-operation with them. It is my opinion that every large dispensary or out-patient department should have a special clinic for the treatment of this class of tuberculosis patients."

TUBERCULIN IN TUBERCULOSIS.

Wells has contributed a carefully prepared paper to the Hahnemannian Monthly on the above topic. From it we make several abstracts.

"Wilkinson, the eminent English authority on tuberculin, reports than an examination of the cases that have come under his observation, show that *ninety per cent.* of the first stage cases and *sixty per cent.* of the second stage cases were cured by tuberculin therapy, and remained so five years after discharge. He further states that 'tuberculin constitutes the chief and most powerful weapon we possess in dealing with the stupendous problem of the cure and prevention of tuberculosis in all its forms.' As a result of his remarkable results several of the English municipalities have established 'tuberculin dispensaries' in preference to 'tuberculosis dispensaries' as being a more practical and more economical method of handling the tuberculosis problem among the poor."

In this necessarily hasty review of a very important and technical subject I have omitted much that is of interest because of lack of space. In closing allow me to present the following conclusions:

First.—A course of treatment by tuberculin, properly carried out, will arrest or cure fully 80 per cent. of all cases of simple tubercle infection.

Second.—In moderately advanced cases it increases the resistance to the disease and diminishes the probability of complications.

Third.—Localized forms of tuberculosis, such as laryngitis, fistula, bone and joint tuberculosis, are frequently cured by tuberculin treatment.

Fourth.—Cases that have been treated by tuberculin in addition to the ordinary hygiene and dietetic treatment are less liable to suffer from relapse.

Fifth.—An accurate and exact diagnosis of the local and general condi-

tion of the patient is an absolute essential before undertaking to apply tuberculin therapy.

Sixth.—Provided the case is properly selected, and the physician regulates the dose carefully in order to avoid reactions, there is no danger attached to the mild method of tuberculin therapy."

"ONE THING THOU LACKEST."

An editorial that recently appeared in the Iowa Homœopathic Journal over the signature of our true and tried friend Dr. George Royal seems to be well worthy of note in the pages of the *Gazette*.

While sitting in front of the St. James' Hotel at Iowa City, June 17, talking about our college, an "old school" friend said: "Royal, has not Homœopathy fulfilled its mission?"

After my emphatic "no," he continued: "You have forced us to reduce our dosage; you have caused us to give up bleeding and purging our patients to death; you have impressed upon us the importance of dietetics; you have taught us to individualize our cases; yes, more, we now follow your examples and experiment on animals for the purpose of getting indications for the use of remedies; most of our best prescribers have not only accepted your principles of giving the smallest doses which will produce the desired result but use the single remedy. We admit that the serums and toxins act in accordance with the law of similia. With this confession or rather statement of facts on our part and your constant accusation of our using your ammunition, what excuse have you for further existence?"

Just before the above conversation another physician had said that there had been more progress in medicine in the past twenty-five years than in the previous twenty-five hundred. So, I replied to my friend's questions that one of the continued reasons for the existence of Homœopathy was that if it ceased to exist, progress in medicine would cease; that the incentive to work in order to excel would be taken away; that if we were absorbed by them, as he implied we should be, a medical trust, a monopoly, would exist; that a trust or monopoly of any kind always meant death to progress as far as the masses are concerned and that in their case the masses were the medical profession. I used our mutual friend's statement to prove the fact that until Homœopathy appeared in the field of medicine there had been no progress for thousands of years. I further referred to Dr. Laidlaw's article on Medical Unity to be found in the May Chironian, 1911.

I further stated that, in order that Homœopathy should continue to be an incentive and inspiration to Allopathy, colleges of Homœopathy must also continue to exist. On this point I referred him to the January Chironian, to an article by Dewitt G. Wilcox. As it was time to go to the Alumni meeting, we separated. Since then I have been thinking about my answer and am of the opinion that I did not give *the* reason for the continued existence of Homœopathy and homœopathic colleges. Assuming that every thing my friend said and what many homœopathists claim to be true, they are only insignificant reasons compared to *the* real significant reason.

ARTICULATING WITH THE HUMERUS.

External Application.

A little girl was assigned a place in the program for public day exercises in school. She was to sing a song, and her mother had drilled her very carefully so that she might not fail. At the last moment before starting for school the little girl said: "Mother, what shall I do if I forget the words."

Her mother replied, "Oh, just keep the tune and say tumy-tum-tum until words come to you."

She sang her song very well and did not forget the words until she came to the last line where she sang,

"And they hung a wreath of roses around my—my—around my tummy-tum-tum."

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ORIGINAL COMMUNICATIONS.

THE COMPOSITE PHYSICIAN.*

By JAMES C. WOOD, A.M., M.D., Cleveland, O.

Agreeably to custom, we whom an all-loving Providence has mercifully spared, meet tonight to pay tribute to the members of the American Institute of Homœopathy who during the last year have been called hence, — a custom which is not only a beautiful one but which also serves to remind us who are yet among the living that we, too are mortal, a fact which the noise and dust of the highway, and our frequent escapes from war, famine, accident and pestilence often cause us to forget. Through the daily witnessing of disease and death we are too apt to become self-confident and indifferent, coming almost to believe that we have a charmed life. The time and the occasion speak more plainly than words the fatuity of this belief.

The profession of medicine, like that of the law or the ministry, develops character along lines peculiar to itself. It has occurred to me that in no way could a more appropriate tribute be paid to our departed friends than in the consideration of those factors which helped make them what they were, those factors which had so large a part in creating attributes which endeared them to us. Necessarily a detailed discussion of the many phases of the subject bearing upon the individual and the development of genius would carry one into the field of heredity and environment which is far too vast for the present moment. I therefore propose to present to you to the best of my ability a picture of the Composite Physician.

I feel that I am pretty well acquainted with the Composite Physician for I have been on most intimate terms with him for more than a third of a century, either as companion or teacher. I entered medical college with him thirty-six years ago. He was

* Address at Memorial Service, American Institute of Homœopathy, Pittsburgh, Pa., June 16, 1912,

then a struggling student with rural instincts, earnest, honest, and with a limited preliminary education. I am inclined to believe that the consciousness of his limited preparation inspired him to harder work in his chosen profession that he might in a measure, by increasing his knowledge of the science and art of medicine, compensate himself for his shortcomings in classic training. He was rather a rough diamond and he was attracted to the profession of medicine because of his fondness in his academic work for the natural sciences and, let us hope, for altruistic reasons as well. He realized that the then prescribed course of study was all too short, and he worked almost night and day, including Saturdays and Sundays, that he might in the then required two courses of six months each acquire sufficient learning to presume to treat the sick. In due time he received the degree which made of him a doctor of medicine, and which enabled him, before the days of statutory laws to exercise whatever skill he possessed in any state in the union, an unsuspecting public receiving him with varying degrees of enthusiasm. Hospital appointments were then few and only available to the most favored, and post-graduate courses in this country had not been established, so that his actual experience at the bedside, other than the few hospital cases seen during his medical course, and the experience obtained while with his preceptor, had to be obtained from his own practice. But he had unlimited confidence in himself and in his ability to cope with disease and suffering.

In the smaller communities he was thrown largely upon his own resources, which made for independence and self reliance, attributes which are not so strongly developed in these later days when the specialist is ever accessible. Unfortunately, the overdevelopment of these attributes all too often went hand in hand with a spirit of intolerance for all who disagreed with him in matters pertaining to either medicine, politics or religion. He was never quite an agnostic in his attitude toward a Higher Power, but I more than surmise that if, in his contemplation of that Power, there appeared in the perspective the dim outlines of a personal God, he honestly associated him with his particular school of medicine.

During the first few years of his practice the question of the wherewithal with which to support himself and his family so entirely occupied his mind that he had but little time for outside reading and cultural growth. He was, however, a student of nature, as well as a student of medicine. The dates of the Gospels were of less concern to him than the way in which intelligence comes to the mind and how we are related to God by reason.

Biologically he could find no evidence that his compatriots had advanced beyond men of the Homeric period. But he saw in the coloring of birds, in the evolution of plants, and in the mystery of generation positive evidence of a Creator.

Darwin's great theory of the descent of man, which upon its promulgation shook the very foundations of orthodoxy, appealed to him, a student of nature, as the most rational explanation of the origin of man ever put forth. For the time being it clouded his perceptions of a great Author of it all, but his faith in a future life was immeasurably strengthened by Darwin's own words to the effect that, "It is an intolerable thought that man and all other sentient beings are doomed to complete annihilation after such long continued slow progress." But like the Roman god, Terminus, it was necessary for him to see the sky in order to see God, and it was sometimes hard for him to worship God when nature was obscured by the four walls of a church.

At the end of the first decade of his professional career there developed facial characteristics which enabled even the most casual observer to identify his calling. There was no halo resting upon his brow, for he was very human, though neither better nor worse than the average individual in other walks of life. His work had not robbed him of humor, for he usually saw the humorous side of life, and medicine, with all its sorrow and sadness and bitterness, possesses a humorous side quite as much as does law or theology. But without any of the external insignia of his profession it was entirely possible by the impress which his work had made upon him to define his vocation, if not his specialty. The subtle influences which made this possible are peculiar to the study and practice of medicine. He was less aggressive and less assertive than upon leaving college. He had by studying and observing the progress of disease become, perhaps unconsciously, an inductive philosopher. He was beginning to learn that medicine was full of limitations and uncertainties, and that if he were to keep in touch with the progress of human thought, his knowledge must become something more than utilitarian. He therefore began to make incursions into the field of general literature and was delighted to find that in almost every department of thought something was to be learned which broadened his conceptions of life, and made of him a better man and therefore a better physician. He had studied at close range those traits of character which make for good or evil. The constant witnessing of human suffering and depravity had developed in him both sympathy and charity, and the great primal cause of it all awoke in him a new sense of duty and responsibility.

As an evolutionist, the dynamic inter-relations of life, mind and matter, interested him more and more. Accepting Herbert Spencer's definition of life as the simplest and most comprehensive yet enunciated—"Life is a continual adjustment of internal relations to external relations"—he endeavored to adjust his own to conform to that definition. In doing this he was simply complying with the same laws that govern the unicellular organism, the amœba, which in movements apparently purposeless and slothful shrinks on one side from contact with an innutritious grain of sand, while on the other it extends its arms or pseudo-podia to embrace a microscopic bit of vegetable matter necessary for its sustenance and nutrition.

If "the pursuit of ends by the choice of means is the mark of mind's presence," as Mr. James teaches, he could not very well gainsay that the amœba, judged by the foregoing conduct, does not present "the marks of mind's presence." And so passing from the unicellular to the multicellular organisms he found that every living thing, either plant or animal, must needs adjust "its internal relations to external relations" or die, and therefore concluded that there is an organic law of the survival of the fittest which applies from monad to man and from savage to philosopher.

As the years passed he anxiously scanned the disclosures of science for the proofs of the origin of life—spontaneous generation, biogenesis, life without life. He read with avidity the writings of Haekel, Lowell and others who have undertaken to solve the problem of the origin of life from the standpoint of materialism but who dismally failed in doing so; annihilism, according to these men, being the ultimate end, a statement which seemed to him contradicted by almost every known biological fact.

When he reached middle life he experienced many new sensations which were very different from those of his earlier years. He became a more profound student of human nature, and if, as Mr. Huxley teaches, "Education is the instruction of the intellect in the laws of nature, under which name is included not merely things and their forces, but men and their ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws," he had acquired in the great school of experience an education of the highest order. On every hand he saw Nature's penalty for not adjusting "the internal relations to external relations" in the development of disease and premature senilty, as well as in the creation of moral depravity. He may or may not have believed in Divine revelation, but his observation and experience made it impossible for him to ignore the fact that the Divine interpre-

tation of things corresponds very closely to nature's interpretation, where he found truth as it came from God. That "the sins of the fathers are visited upon the children even to the third and fourth generation" was forced upon his attention at almost every turn, and were it not for men like Schumann and Chopin and Weber and Leopardi, who had so large a share in the advancement of the human race in spite of inherited diseases like tuberculosis and syphilis, he would at times have become almost discouraged in his efforts to save by medical selection the victims of that immutable law. He saw that modern hygiene is but a greater development of the Mosaic law; and that acquired diseases of all kinds are the penalty of ignoring Nature's laws, either physical or moral. He came to believe that Metchnikoff's conception of orthobiosis, which teaches that the greatest happiness consists in the normal evolution of the sense of life leading to serene old age and not reaching its full satiety under one-hundred years, is no idle dream. The retention of the waste products of metabolism because of insufficient air and exercise, the strain of modern industrial life, the demoralizing effect of alcohol and narcotics, the nervous and cerebral exhaustion incident to anger and envy and jealousy, the suppression of altruistic impulses;—these are a few of the causes which he saw ended in unhappiness and physical suffering and which it was the mission of the physician to contend against. He had only to visit the wards of his hospital to see that "Whatsoever a man soweth that shall he also reap," is Nature's if not God's way of visiting his iniquities upon him.

I do not believe that it is presumption on my part to state that, contrary to the general belief, the study and practice of medicine develops a broader sympathy than does any other occupation in the world, for the physician understands the human heart better than does anyone else in the world. He has made a more profound study of the influence of heredity and environment on the development of character than is possible for one not in intimate contact with sick and morbid humanity.

Our Composite Physician was the first to look upon alcoholism as a disease and advocate its treatment as such. He saw the injustice and inhumanity in punishing the victim of alcoholism as though he were a common criminal. The consequence of this broad humanitarianism is that innumerable cases of alcoholism are now cured that formerly found their way into the asylums and jails. He can perhaps appreciate better than anyone else the world's injustice to woman in making her whom even the Great Physician did not condemn, an outcast because of being overwhelmed by an imperious reproductive instinct,—an instinct with-

out which the great divine comedies of life would never have been written, the great world pictures would never have been painted, the great battles would never have been won, and the great achievements in science and exploration would never have been accomplished. He knows that much of the pessimism of life is because the "courage maker" is sick and that sermons and good resolutions cannot do much until the "courage maker" is put right. He knows that man's mental state is responsible for many of his sensations; that an emotion can make him happy or unhappy; that it may drive away pain and discomfort, and that it can turn grief into joy and make a change in the governing impulse to action that may continue through life. His daily experiences at the bedside impress him more and more as time goes on with the importance of the science of eugenics, if we are to improve the human race both morally and physically. He is constantly humiliated by the fact that the stock breeder exercises infinitely greater care in breeding his horses, cattle, sheep and chickens than does man in breeding men and women.

And so as the years pass by and he approaches the allotted time of man he becomes more liberal in his attitude toward other schools of medicine and other methods of cure. He believes with Richard Henry Savage, "that there is no man, no sect, no single school which can in these broadening days of intelligence tie down the human hearts of the twentieth century to any bounden or grovelling belief." In matters medical his foremost thought is "the greatest possible good for his patient." He comes to believe that all good comes from one great source,—an all-loving Father. He may care but little for religious sects and theological dogmas, but he sees good in all sects and in most religions. He cannot conceive that an all-loving Father would consign His children to the Hades of tradition, but he has nevertheless repeatedly seen the head bowed and the temples frosted by the waywardness and ingratitude of children and friends. On the other hand he has more than once had a glimpse of Heaven through the smile of the young mother when she sees for the first time her newborn babe.

It is not in the least difficult for him to believe in miracles, because he is daily witnessing miracles in his own practice. Indeed the origin of life and the development of the living organism is to him a miracle of miracles. The wonderful resources of nature in contending against disease and the invasion of micro-organism in itself constitutes a miracle. All that he has accomplished in the curing of disease and the relief of suffering has been accomplished by coöperating with nature and by aiding and as-

sisting Nature's efforts to right the wrongs brought about by ignoring Nature's laws.

He is a lover of all animals and if he were to deny to the lower organisms the possession of mind, it would be hard for him to find the necessary varieties of imperfect, deformed and damaged minds to fit the brains of idiots and undeveloped human beings. But he loves best of all his brother man, and, knowing as he does that the great conquests of medicine and surgery of today would have been impossible without experimentation upon the lower animals, he is a thorough believer in vivisection.

He sees in the closed door which separates the natural world from the spiritual world, which no man has yet opened, an analogous condition in nature in the door which separates the inorganic from the organic. The universe discloses to him through his scientific work a beauty so transcendent that he finds an overwhelming reward simply to behold it. He comes to have an abiding faith that the phenomena of the spiritual world are analogous to the phenomena of the natural world. The function of nature as he understands it is rather to interpret religion than to prove it, and while the spiritual world as it stands is full of perplexity concerning which one can escape doubt only by escaping thought, he sees that the reign of law has gradually crept into every department of nature transforming knowledge into science. And if it is possible to endow the dead atoms of the inorganic or mineral world with the properties of vitality by the bending down into it of some living form in the nature of a plant, so that its minerals and gases are touched with the mystery of life and thereby ennobled and transformed to the living sphere, he finally comes to believe with Mr. Drummond that, "The breath of God going where it listeth touches with its mystery of life the dead souls of men, bears them across the bridgeless gulf between the natural and the spiritual, the spiritual inorganic and the spiritual organic, endows them with its own high qualities and develops within them those new and secret faculties by which those who are born again are said to see the Kingdom of God."

. . . .

In this great school of experience which I have but barely outlined the men and the women whose memories we tonight cherish and honor were educated. It is a school in which are laid bare the sins and sorrows, the joys and aspirations, the disappointment and failures, the loves and antagonism, and the good and the bad of humanity. The temptation is to hesitate and indulge in individual eulogy, for a number of those whose faces we miss were my warm personal friends and co-workers. Bio-

graphical sketches of most of them will or have appeared in the Institute Journal. But let us on this occasion drape above them, in imagination, the flag of patriotism and loyalty and as the cortege with muffled drums moves on let us stand with uncovered heads and with hearts full of gratitude for the good they accomplished while with us, for their loyalty and devotion to humanity's cause and for their splendid example of self-sacrifice and devotion to duty. Let us blot their faults from our memory, for they have them as we have them, not forgetting that, compared with the infinite ages which bridge the Paleozoic period and the present, the time for the perfection of the human soul during the comparatively few years of present life is very short. But to paraphrase a verse of a beautiful poem :

> "Life by life, and love by love,
> They passed through the cycles strange
> And breath by breath and death by death,
> They followed the chain of change.
> Till there came a time in the law of life,
> When over the nursing sod,
> The shadows broke, and their souls awoke
> In a strange dim dream of God."

ACUTE PNEUMONIC FEVER. *

By Wm. H. Van den Burg, M.D., Professor of Medicine, New York Homœopathic Medical College.

In its broadest sense, the term, acute pneumonia, pneumonitis, or pneumonic fever, applies to any inflammation of the lung accompanied by consolidation of the vesicular tissue, no matter how distributed anatomically. In a narrower sense, the expression is reserved for those consolidations which form a single mass of considerable extent, generally spoken of as "lobar."

Occurrence. Pneumonia is one of the most fatal as well as most frequent of the acute diseases. The actual frequency, as compared with all *internal* diseases, varies, according to different obtainable statistics, from 2 to 7 per cent.

In the United States, in 1890, over 9 per cent. of all deaths were due to pneumonia; in 1900, 10.5 per cent. (The 1910 figures are not yet accessible.) In 1900, in cities, the mortality from pneumonia was 233.1 per 100,000 of population; in country districts, 135.9 per 100,000 of population. The same census gave

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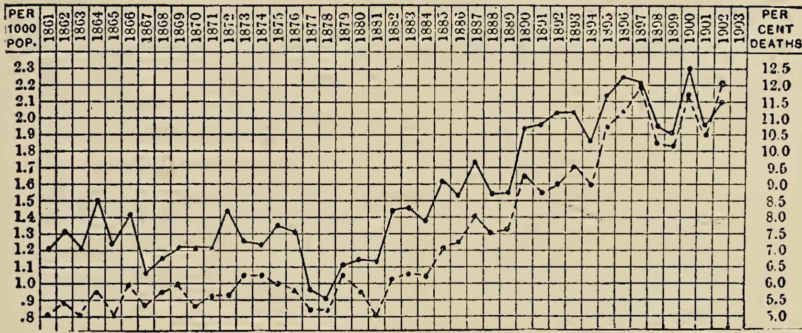
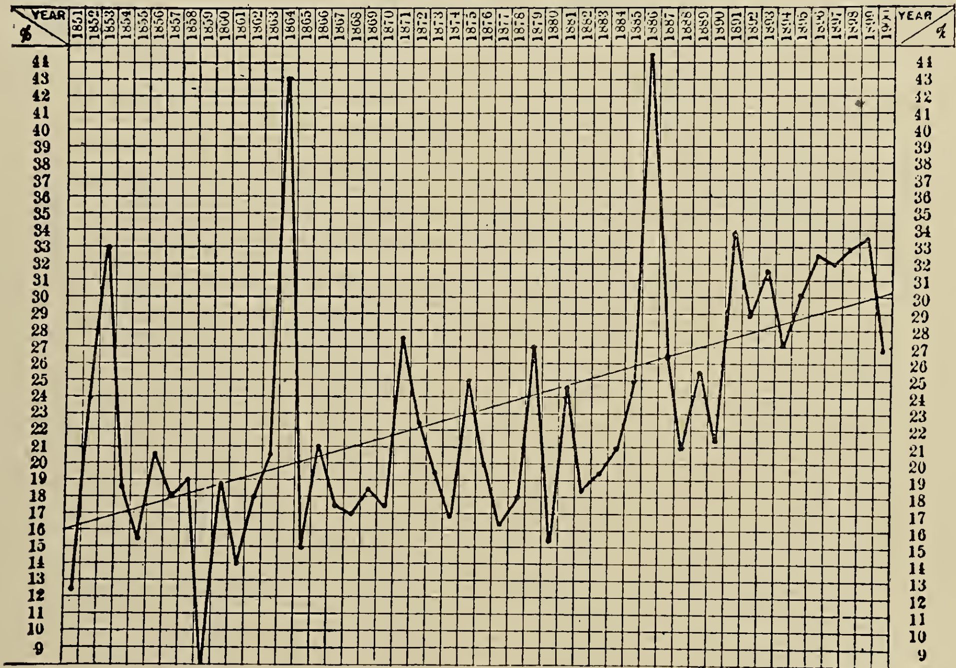
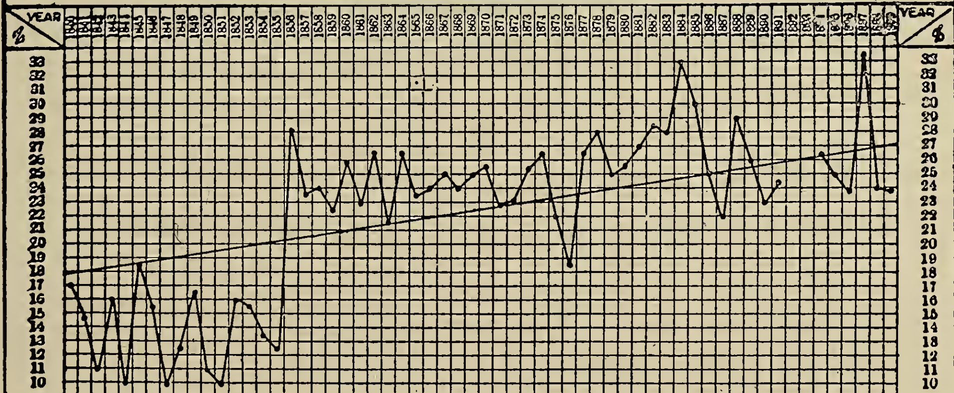
* Read before the American Institute of Homœopathy, at Pittsburgh, Pa., June, 1912.


PHILADELPHIA
PER 1000 POP.
PER CENT DEATHS


GLASGOW ROYAL INFIRMARY
YEAR
%


VIENNA GENERAL HOSPITAL
YEAR
%

111,059 deaths from consumption and 105, 971 from pneumonia. Some other figures were in round numbers—typhoid 35,000; diphtheria 16,000; meningitis 4,000. Furthermore, pneumonia seems to be on the increase. American statistics show the following:

Proportion of total mortality in 1870—7 per cent.; in 1903—15 per cent.; in 1904—19.5 per cent. The rapid increase has been attributed, at least in part, to influenza epidemics.

The health statistics of Chicago show 12.5 per cent. of all deaths due to pneumonia, this being far in excess of the deaths due to tuberculosis; also that the mortality from pneumonia has increased from 4.4 to 19.95 per 10,000 inhabitants. These figures have been questioned by some, but it may be safely stated that the frequency of pneumonia is not diminishing and that the number of deaths from this disease is appalling, and equals, if it does not exceed, those from tuberculosis.

The accompanying charts from the Allgemeine Krankenhaus in Vienna, the Glasgow Royal Infirmary, and from Wells's statistics for Philadelphia show very graphically the constantly increasing frequency of the disease in Europe as well as in the United States.

The records of 685,566 cases collected by Wells show a fact long recognized, that the majority of cases occur between November and June, January, February, March and April showing the highest percentages. Elaborate investigations have been made to determine the reason for this and the conclusions stated by Anders seem the most reasonable; viz., "That the major influence exerted by the seasons, however, is probably not direct (e. g., by the lowering of the bodily resistance due to low temperature, high barometric pressure, direction and velocity of the winds, etc.), but indirect; namely, by bringing about that effective element in the causation, concentration and increased virulence of the specific poison in consequence of closed doors and windows and lack of free ventilation."

Pneumonia remains practically the only infectious process the incidence and mortality of which is still unaffected by the fact that its etiology is well understood and by that education of the public in health matters which is producing such excellent results in typhoid and tuberculosis. It is a lamentable fact that in spite of a hundred years of progress the mortality of pneumonia has not been decreased.

Etiology. The knowledge of the infectious nature of pneumonia dates from the observations of V. Jurgensen in 1874. It was not until 1884, however, that the relation of the pneumo-

coccus to lobar pneumonia was definitely established by the labors of A. Fraenkel. He then stated that the *pneumococcus* was in all probability the chief causative agent of pneumonia and as a result of his investigations pneumonia was at this time definitely placed among the infectious diseases. It has since been proven that many other bacteria are capable of causing inflammation and consolidation of lung tissue, especially streptococcus, staphylococcus, influenza bacillus and Friedlander's bacillus, but Fraenkel's diplococcus is the recognized cause of the great majority of cases of true lobar pneumonia. More recently, and as a direct consequence of increasing knowledge of the disease, it has become customary to regard pneumonia as a *general* pneumococcus infection with the lesion in the lung as but *one* of the manifestations, which view of the disease allows a clearer conception of the clinical symptoms and complications.

Contagion and Infection. The questions of contagion and infection are not yet settled. Unquestionably, cases do arise from direct exposure; for instance, several cases in the same house. I recall very vividly the first case of pneumonia I ever saw in private practise in the winter of 1888. A man about fifty-six years old was taken with a typical attack and was nursed by his wife, a strong woman somewhat younger. On the fourth day the wife had a chill followed by lung consolidation which developed rapidly into a true case. Both cases ended fatally a few days later. This experience made such an impression on my mind that ever since I have insisted upon the utmost caution on the part of those nursing pneumonia patients.

Certain it is, also, that one attack confers little or no immunity against a second, two, three, or four recurrences being not uncommon.

The only observation that is worthy of comment is the absence of relation between the size of the lesion and the constitutional disturbance. Many small consolidations may be accompanied by severe fever and toxic symptoms, while, on the other hand, one frequently sees massive areas of consolidation with very mild constitutional symptoms. This is probably due to difference in virulence of the infecting bacteria.

Symptoms. The symptoms and physical signs of this very common disease are so well known that I shall call attention only to some of the more unusual or important ones.

Pain somewhere in the chest is a very usual symptom and always directs one's thoughts to the possibility of a pneumonia, but pain in the abdomen, and especially in the lower right quadrant, is such an unusual symptom that it is well to bear in mind

the possibility of a pneumonia beginning in such a manner. I once had a case brought two hundred miles to New York for operation for appendicitis who had a well developed consolidation of the right, lower lobe with pain only in the region of McBurney's point, but without the rigidity of the rectus muscle or other evidence of appendicitis. He was not operated, passed the crisis on the seventh day, and made an excellent recovery. Operations for appendicitis have frequently been performed on similar cases and no trouble found in the appendix.

Fever. This is usually of the high, continued type, terminating by crisis, but may begin gradually and terminate by lysis.

Crises occur from the second to the eighteenth day. I have had the good fortune to see one typical crisis in forty-eight hours and one on the fourth day in a patient seventy-two years old with a typical abrupt beginning, having chill, delirium, temperature continually between 104 and 105 degrees. In a series of 1987 cases collected by Musser and Norris, the crisis occurred on the sixth day in 10 per cent., on the seventh day in 17.4 per cent., on the eighth day in 14.1 per cent., on the ninth day 10.2 per cent.—in other words, the crisis occurred in 52 per cent. of the cases between the sixth and ninth days.

Pulse. Perhaps one of the most important symptoms of all is the pulse, for it is usually upon the condition of the pulse that the prognosis is based. For instance, Griesinger states that of those with a rate higher than 120 over one-third die. Certainly, when the pulse in adults is above 125 the mortality is very great. The rhythm, volume and tension of the pulse are of equal or even greater importance than the rate.

Mackenzie states that "in all cases of acute lobar pneumonia that I have met, when the pulse showed even an occasional irregularity before the crisis was reached death supervened . . . . Within a few hours after a rigor the fatal termination may be too plainly foretold by the character of the pulse." This may be an exaggeration, but certainly too close attention cannot be given to the rate, rhythm, volume and tension of the pulse.

The normal relation of respiration to pulse is 1 to 4.5; in pneumonia it may be 1 to 3, 1 to 2, or even 1 to 1. In doubtful cases with few physical signs such a disturbance of ratio would be suggestive of the disease.

The Heart. Perhaps the most important symptom in the heart is the character of the second sounds at the base. The pulmonic second sound is usually accentuated. The disappearance of this accentuation is often a grave sign of impending acute

dilatation. A sharp, snappy pulmonic second tone is very important evidence that the patient is doing well.

Respirations. These are usually rapid, but an exact danger line is difficult to draw. Respiration of 50 or more in an adult, unless due to pain, mental excitement, or pleural effusion, is a cause of apprehension, especially if accompanied by marked movement of the alæ nasi or any degree of lividity.

Blood. Leukocytosis usually appears soon after the chill. According to Cabot, "when either the patient or the disease easily gains the upper hand there is no leukocytosis or only a slight one; but in the much larger class of cases in which the struggle is a fierce one, leukocytosis appears, whichever way the battle results!"

Blood Pressure. Gibson and Goodwin have shown that if the blood pressure in millimeters falls below the pulse rate per minute, recovery is unlikely. This observation has an important bearing on treatment. A rapidly increasing pulse rate may be due to an attempt on the part of the heart to keep full a rapidly relaxing arterial system, in which case arterial stimulants are indicated, caffeine, digitalis, strychnine, etc., and nitrites would still further handicap nature. On the other hand, a rapidly increasing pulse with no fall of blood pressure would indicate a failing myocardium and nitrites might help to reduce the burden of the struggling heart if the blood pressure was sufficiently high to permit of some lowering.

Leukopenia is attended by a high mortality. In a series of 1080 cases of various authors, 108 cases showed no increase in leukocytes and 94 of the 108 proved fatal.

Physical Signs. Before the classic signs appear it is often difficult or impossible to make a positive diagnosis. Connor and Dodge studied 392 cases in the early stages and came to the following conclusions in regard to the relative importance of the early signs: viz.,

1. Circumscribed area of feeble and indistinct breathing compared with the opposite side.
2. Circumscribed impairment without or with a tympanitic quality. (Sitting up.)
3. Crepitant rales.
4. Slight increase in intensity and clearness of vocal resonance.

Prognosis. The mortality ranges from 20 to 25 per cent., or even higher, no matter from what source the statistics are gathered. Wells collected from various sources 465,400 cases with 94,826 deaths, or a mortality of 20.4 per cent. Musser collected

43,455 cases with a mortality of 21.06 per cent. According to the United States census of 1900, the death rates from pneumonia were highest among those under fifteen years of age (277.1 per 100, 000) and at and over sixty-five years (805.4 per 100,000).

Pneumonia should therefore be regarded as one of the most, if not the most, fatal of the acute diseases.

Habits, as regards alcohol and other excesses, are perhaps the most important factors affecting the outlook. In those accustomed to even very moderate quantities of alcohol the outlook is very dubious.

The state of the heart as to previous muscular or valvular disease is next to alcoholism in importance to prognosis.

The Influence of Age. Mortality tables show a steadily increasing risk after five years of age. I am personally inclined to think that the outlook is rather better between sixty-five and seventy-five years of age than between fifty-five and sixty-five years. I have no statistics on this point but quote merely from personal recollection.

Prophylaxis. Individual protection demands:

1st, Keeping the respiratory organs as clean as possible. Blowing the nose after inhaling dust or being exposed in close places to a coughing, sneezing crowd is the best method of clearing this organ. The mouth and throat should be cleansed by the free use of a gargle and the toothbrush.

2nd, Abstaining from alcohol.

3rd, Guarding against exposure, exhaustion and privation.

Communal protection demands that an infected person be isolated and his discharges disinfected. This latter feature, particularly, should be rigidly carried out. I realize that these recommendations are comparatively ineffectual, but with our present knowledge this is all that can be done.

Treatment. The first essential in treatment is to recognize the important fact that the patient with the pneumonia, and not the pneumonia with any particular patient, must be the basis of all treatments. In other words, there is as yet no specific treatment for pneumonia.

The disease is self-limited and generally terminates by crisis, therefore the treatment should be directed toward facilitating this crisis, supporting the patient, protecting him from any unnecessary mental or physical strain, and being constantly ready to meet emergencies as they arise.

Nammack says there are clinically three classes of cases:

First, those who will recover in spite of all you may do to them;

Second, those who will die in spite of all you can do for them;

Third, a very large intermediate class in which the result may depend upon skilful, judicious therapeutic intervention.

The first indication is rest, both mental and physical. This is of prime importance. The writer recently saw in consultation a vigorous boy of twelve years sufferng from double pneumonia who had not slept for seventy-two hours. He looked haggard and worn, with respirations of sixty per minute, temperature 105 degrees, and was being disturbed every half hour day and night for the purpose of giving some medication or nourishment. A recommendation promptly carried out not to disturb the patient for *anything* for three hours resulted in a rapid change in the condition. The crisis was successfully passed forty-eight hours later and a good recovery made. Meddlesome medication may prove more harmful than none at all.

The second requisite is fresh air and plenty of it. The open air treatment for pneumonia was announced by Northrup in 1904 and has been endorsed by nearly all clinicians of wide experience since. It has changed the usual directions prescribed in the text-books of "warm, equable temperature" to that of "cool, dry, stirring air." The writer has seen many cyanotic, restless, toxic cases immediately relieved by putting the head of the bed before an open window, even in midwinter in the rigorous climate of New York. It has practically done away with the oxygen tank and many previously advocated hydrotherapeutic measures. The fresh, open air seems just as beneficial in pneumonia as in tuberculosis.

Serum Therapy. Krische, Pye-Smith and Beco have reported favorably on the use of Römer's pneumococcus serum in a limited number of cases. On the other hand, Reitter of Vienna, after a fair trial, was unable to see any favorable influence over the disease. The serum treatment has not attracted any large number of advocates and the weight of evidence at present is that the disease is not favorably influenced by its use.

Vaccine Treatment. At present, a large number of observers are using vaccines. From the literature published on the subject, a series of 389 cases has been collected with a mortality of fifty-two, or 13.3 per cent., as compared with the general mortality of 20 per cent. This is a very favorable showing. It must not be forgotten, however, that the number of cases so far reported is very small and with further reports the mortality may be increased. Most observers, however, speak favorably of the method.

Several new methods of treatment have been advocated re-

cently, among them large doses of camphor in oil throughout the disease. Seibert reports twenty-one cases; no deaths.

Another is the use of quinine in large doses. Several observers report short series of cases with low mortality The Rockefeller Institute has made some experiments along this line, but no conclusions are yet obtainable.

Electrargol, or collargol, intravenously, has been mentioned favorably. All these reports are of such a character as to make one doubtful of the real utility of the methods mentioned.

Recently, Wright of the United States Army, has reported a small series of cases treated by deep muscular injections of mercuric succinimide. He used 1 2-5 grains of the salt, his theory being that *"mercury is the chemical affinity for every vegetable organism."* His case histories and charts show a crisis following shortly after the injection in all cases.

After studying the subject carefully and extensively for a period of twenty-five years, the writer is forced to the conclusion that as yet in the treatment of this disease there is nothing superior to the well-selected homœopathic remedy, with good nursing, careful diet, and plenty of fresh air. With aconite, veratrum vir., bryonia, phosphorus, tartarus, and many others, when indicated, the results are better (though still far short of what is desired) than with any other method so far advocated. In support of this view, the following statistics collected by Dr. J. Roberson Day show the mortality in acute pneumonia in children under twelve years:

At the London Homœopathic Hospital during ten years there were 396 cases with 49 deaths, a mortality of 12.3 per cent.

In five London hospitals of the regular school for one year there were 894 cases with 221 deaths, a mortality of 24.7 per cent.

In conjunction with the well-selected remedy heart stimulants may be needed occasionally. Of these, digitalis, strophanthus, strychnine, coffee and camphor are the sheet anchors when the heart shows signs of failing. Heart stimulants should be used as soon as any irregularity in either rate or rhythm manifests itself.

One final recommendation for the severe pains which keep the patient from resting, if not controlled by the homœopathic remedy — small doses of morphine, 1-32 to 1-16 grain, hypodermically, often prove life saving.

The subject is a large one and the writer realizes fully the shortcomings of the present article, but feels hopeful that it may be helpful at least in a negative way by inducing homœopathic physician to avoid harmful medication and give nature its best possible chance to overcome the malady by helping with the well-selected remedy, which is, I repeat, the best aid we have at present.

HAY FEVER

(*Continued from the July issue.*)

By George B. Rice, M.D., Boston.

A brief survey of the anatomy and physiology of the air tract will help to establish more plainly the theories I shall advance. The intra-nasal passages are divided into two portions by the nasal septum, and these passages are in turn divided by the turbinated bodies into meati; inferior, middle, and superior. The inferior turbinate is a part of the superior maxillary bone, and extends about three-fourths of the outer-nasal wall. The middle and superior turbinates are a part of the ethmoid bone. The lining membrane of the extreme anterior portion of the nose or vestibule, as it is called, is composed of stratified epithelium, through which grow hairs called vibrissa. The remaining portion of the cavity is covered with mucous membrane, which in the upper or olfactory region is covered with ciliated columnar epithelium. Over the lower portion of the middle turbinated body, the whole of the inferior, and a portion of the septum is a complex tissue called erectile tissue. This consists of a basement membrane, lymphoid tissue, mucous glands, and numerous thin-walled venous sinuses, surrounded by a little fibrous and connective tissue, which collapse and are distended under varying vasco-motor impulses. The anterior superior arterial supply of the nose is derived from the ethmoidal branches of the opthalmic artery, while the other branches are nearly wholly supplied from branches of the internal maxillary. The venous supply returns from three sources; the blood from the superior portion enters the ethmoidal veins, and from thence to the longitudinal sinus; the second empties into the internal maxillary vein, and the third, through the veins of the floor of the nose, and anterior portion of the septum, returns by way of the facial vein. The olfactory nerves reach the upper part of the nose through small perforations in the oribriform plate of the ethmoidal bone. The sensory nerves are derived from the fifth pair. The roof and anterior portion are supplied by the ophthalmic branch, the middle and posterior portions largely from sensory and sympathetic branches of the spheno-palatine ganglion. Through the vidian nerve, carotid plexus, and bronchial plexus a route is established between the nose and the bronchi, which may in some cases account for the asthmas associated with, or occasioned by, an attack of hyperesthetic rhinitis.

* "Two points of anatomical interest in the septum are: the

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* Diseases of the Nose and Throat, by Knight and Bryant.

organ of Jacobi, and the tubercle of Margagini. The former exists in man just within the nostril, and above the floor of the nose in the form of cul-de-sac. The latter is a spindle-shaped aggregation of glandular tissue opposite the anterior end of the middle turbinated body."

There are five accessory cavities opening into the nose, which are a part of the whole complex nasal structure. The functions of the nose may be classed as respiratory, olfactory, auditory, and vocal.

The respiratory functions which concern us chiefly in this paper are: the freeing of dust and germs from the inspired air; the warming and moistening of the air; and the destruction of micro-organisms.

That this function may be adequately performed the contraction and dilatation of the erectile tissue is constantly changing, and so the membraneous areas presented to air contact are also constantly changing. Thus is established between the nerve centers and the nasal tissues a very delicate balance, and if the nose is normal, and the nervous system healthy, this adjustment is always in accord with the varying atmospheric conditions. We can also readily understand why the blood supply of the nose is so abundant, when we consider the amount of moisture and heat, both conveyed by the blood current, are necessary to warm, moisten, and purify the air current.

As has been said, most writers divide hay fever into two forms, the periodic and chronic. One authority designates one type as hay fever, and the other as hyperesthetic rhinitis. The first division seems more definite, and will therefore be adopted in this lecture.

Both forms show practically the same pathology. There are usually present in the individual three etiological factors.

First. The abnormal state of the nervous system, which may be of hereditary origin, or acquired through some severe illness or disturbance of equilibrium through accident, or emotional disturbances. This predisposition may be manifested in children, as in eczema.

Second. There are usually present intra-nasal deviations from the normal, hypertrophies, tumors, septal malformations, or accessory sinus disease. The local lesion may be only enough to produce abnormal contact points with resulting irritation, or we may find varied and serious pathological changes. In all instances there is present the hypersensitiveness of the mucous membrane, at times general, and again confined to localized areas, and this hyperesthesia varies in intensity with changes from the normal in digestion, elimination, sleep, and other bodily functions.

Third. There is present in all cases abnormal susceptibility to atmospheric changes, and to a large variety of odors, pollens, dust, and other emanations, each patient showing varied idiosyncrasies. In some rare cases the intra-nasal changes, excepting the hypersensitiveness, are not present.

RACE AND CLIMATE

Although the British and Americans are supposedly more prone to this disease, yet the malady is found in all parts of Europe as well. There are also more sufferers in the temperate zone than elsewhere.

AGE AND SEX

In most instances hay fever manifests itself between the age of fifteen and forty, but cases are on record where the disease has appeared before the age of ten and after sixty. The malady is practically confined to the educated class.

* "Giddings' statistics show that physicians, clergymen, lawyers, merchants, and manufacturers supply more than half of the sufferers." Males are more frequently afflicted than females.

THE PERIODIC FORM

In this class the patient may be absolutely free from local or general discomfort, except during certain periods of the year, usually the latter part of May, June, August and September, or until the first frost. Other periodic sufferers are only afflicted when they inhale dust or odors from horses or mules. One of my patients was unconscious of any nasal abnormality except when a cat was in the room.

As has been stated in the early part of this paper, there are a large variety of pollens which may act as irritants; the most constant are from the rose, June grass, ragweed and goldenrod. Dunbar has isolated the toxic properties from a large variety—over thirty. It is not alone the mechanical contact of the pollens that produce the nasal irritation, but the presence of certain toxic albuminoid bodies which are set free by the nasal secretions, and are in a measure absorbed.

Practical experience has demonstrated this latter fact, as frequently several hours may elapse between the time of exposure and the local symptoms, and a longer period in certain cases before the asthmatic symptoms become troublesome.

THE CHRONIC FORM

Here the local and general conditions may be essentially as in the first division, but the external causes are more varied, and

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* De Schnenitz and Randall's Diseases of the Eye, Ear, Nose and Throat, 1899.

the attacks are not confined to any particular time of the year, or to any special irritant.

In some instances the inhalation of pollens does not precipitate an attack, but sudden atmospheric changes, the first frost or snow fall, exposure to damp or east winds, or a slight cold will be sufficient. In other cases fatigue, excitement, indigestion, and the inhalation of any sort of an irritant will prove the exciting cause.

SUBJECTIVE SYMPTOMS

As can be readily understood the symptoms of hay fever show a surprising variation in time and manner of onset, and in severity of manifestation. The early symptoms are usually itching and burning in or about the inner canthus of the eyes, followed by irritation in the nose, roof of the mouth, and soft palate, of a tickling and burning character, later accompanied by coryza, violent sneezing, and obstruction to respiration. The sneezing may be of a violent character; the paroxysms also are frequently so prolonged as to leave the patient in an exhausted condition.

As the disease progresses the intra-nasal passages become congested, the secretion changes from a watery to a mucous or muco-purulent discharge, the senses of taste and smell are lost, there may be rise of temperature, headache, and prostration. In the periodic form, particularly in the fall attacks, these symptoms are frequently followed at night or in the early morning by asthmatic seizures. The eye symptoms also increase and there is more or less conjunctivitis, photophobia and lachrymation.

The naso-pharynx may be affected, and when this is the case, there is eustachian fullness, partial deafness, and tinnitis. Cutaneous itching is not uncommon.

These paroxysms are accompanied, says one author, *"By diminution in the quantity of urine, with abundant deposits of urates, and a decrease in the amount of urea." The symptoms are usually intermittent, the storm apparently expending itself after a varying period. In the chronic form the attacks are not as violent, although they are of much greater frequency.

The objective symptoms are difficult to accurately determine. In the early stages the nasal tissues are pale, puffy, and covered with serum, and occasionally their pallor is extreme; later there is redness, swelling and a condition resembling that seen in the second stage of an ordinary acute coryza. Sufferers from all forms of the malady notice that there is always a mild attack of sneezing and coryza on waking in the early morning. This has been explained in various ways, viz.: the sudden return of reflex ex-

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* Hay Fever—Younge.

citability, the changes in the circulation of the blood, the retention of waste products, and the setting free of dust which may have settled in the bed clothing during the night.

DIAGNOSIS

The diagnosis of the different forms of the disease is an easy matter if the symptoms are well marked, although in the mild cases they may be more or less confused with other pathological conditions, such as accessory sinus disease with polypoid formations, or nasal irritation due to foreign bodies, or mechanical irritation from septal malformation, or turbinal hypertrophies, or even an ordinary infectious coryza.

PROGNOSIS

Cases do recover from this affection, some apparently spontaneously, others as the result of treatment. A large percentage can be relieved, and a small percentage cured. Figures cannot be given, there is such a wide variation in the statistics of different authorities.

TREATMENT

The underlying neurosis should receive our first attention, and the strictest possible attention should be given to care of diet, clothing, and general hygiene. The food should be of such a character as to cause as little retention of waste products as possible, and a considerable amount of pure water should be insisted upon, apart from the regular meals. The skin should be kept active by proper bathing, and the use of cold sponge or shower, followed by a vigorous rub-down. Cold applications are only of value when followed by a prompt and lasting reaction. The method of using cold applications should then vary with the reactionary power of the patient.

Massage, spinal vibration, and the high frequency current are of undoubted value, particularly the latter. *"We know that under the high frequency treatment elimination of CO_2 is increased, that the blood is more perfectly oxygenated, and that the relations of uric acid and urea are reduced to normal; and that there is an increase in the production of heat, the body temperature remaining normal. Personally I have the greatest confidence in the helpfulness of this method of treatment. I use not only the monopole, but also the vacuum electrodes over the nasal passages, spine and chest, with, I am sure, beneficial results. If possible an unfavorable environment or occupation should be changed.

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* High Frequency Currents—Williams.

TREATMENT OF THE LOCAL CONDITION

It is hardly necessary to say that during the intervals of comparative freedom from irritation the intra-nasal structures should be carefully examined by the aid of a good light, a proper speculum, probe and some depleting solution, such as cocaine, or suprarenal alkaloid. The latter should not be used until as much information has been obtained as possible from a gross inspection. All abnormalities found should be corrected. After a period of some weeks following surgical procedures the nose should be tested with a probe for hyperesthetic areas, and these cauterized superficially with the galvano cautery or glacial acetic acid. Usually two or three areas can be obtunded at a sitting.

Local treatment should be strictly individualized. Rarely will the patient tolerate any but the mildest and most soothing applications. Occasionally a simple alkaline solution used in a nasal douche for cleansing purposes will give a certain amount of relief, but even that should be cautiously used, and withheld if irritation is the sequence.

One of the suprarenal alkaloid preparations, diluted with two parts water, may in some individuals bring about much relief if used locally and internally. One author says, *"The specialist by these means (hygiene and suprarenal alkaloid) should be able to relieve all of his hay fever patients, and cure seventy-five per cent." Time and experience have not by any means substantiated this contention.

There is no doubt of the value of Dunbar's "Pollantin" in a small per cent of the periodic cases. A spring and fall powder and liquid are made, although the powdered preparation is seemingly the most effective. This treatment should be tried in all obstinate cases. The immunizing treatment has a few advocates, and is also of undoubted value. There are two methods of producing immunization, first by graduated exposure to the irritating external cause, and this can be induced by bringing pollens or dust, or odors into the patient's room, or, second, by giving internally the tincture of the plant producing the pollen. Ragweed can be used satisfactorily in the form of Liquor Ambrosia (Curtis). Golden-rod tincture can be given in fifteen drop doses four times a day. It is not always possible to distinguish the particular irritating pollen, but when this can be done the method is worth trying. The latter manner of producing immunization is of course only applicable to the plant cases.

Recently Parke, Davis & Company, the well-known chemists,

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* The Successful Treatment of Hay Fever,—by J. W. Jervey, M. D., New York Medical Journal, August 9, 1902.

have advocated the mixed "Phylacogens" or Modified Bacterial Derivatives in the treatment of hay fever, and they claim astonishing results. Should further observation substantiate these claims the result will be to entirely overturn our present conception of the causes of hay fever and asthma, and put them on a bacteriological basis.

Changes in location, for relief, are largely experimental. The pollen sufferers are relieved by a sea voyage, or by residence in a location near a large body of water where the prevailing wind is from this direction.

In the administration of internal remedies none have been found more effective than those given by Blackley in 1880, Potassium iodide, Merc. iodide, Arsenite of Quin., Arsenicum, Arsen. iodide, Sulphur. To this list I would add Arsenate of Strychnia, Naphalin, Sabadilla, Grindelia robusta, Allium cepa. and Arum triph., according to their several indications. As our methods of treatment are not adequate in curing a large majority of hay fever sufferers, further study and investigation are of the greatest importance.

ADDRESS TO THE 1912 GRADUATING CLASS OF BOSTON UNIVERSITY SCHOOL OF MEDICINE.

By Nelson M. Wood, M. D., Associate Professor of Clinical Medicine, Boston University.

It is with pleasure that the Faculty of Boston University School of Medicine greets and congratulates you this evening. For four years you have been with us, endeavoring to fit yourselves for your chosen work. To me as the representative of the Faculty, it is an especial pleasure to address you, since I have been intimately associated with you three of these years, and have come to count the members of the class of 1912 as personal friends. I assure you that it is most gratifying to us to see you successful in obtaining your coveted degree.

The years you have spent here have been employed, we hope and believe, in faithful, earnest and intelligent effort on your part, and in a spirit of equal co-operation on the part of your instructors. Thus far in your medical career, your responsibilities have been light. However much any of you may have struggled to secure your education, your real struggles are soon to begin. The serious obligations of your profession are before you. Obtaining your medical degree and passing the examinations of the State Board in order that you may practice your art in a distin-

guished State, are but stepping stones to the great highway of medicine.

You stand now where many have stood before you, where many will stand after you. The scene is old and familiar. All that I can say and the best that I can say must also be old and familiar—old, yet always new; just as Youth and the Spring are old, yet always new.

The other day there was placed in my hands a little poem, written, I am glad to say, by a graduate of this school, Dr. Thomas J. Partridge, of the class of '89,—which beautifully expresses the thought of the eternally new in the eternally old—

The sun comes up; and I doubt if e'er
Man's eyes beheld a morn so fair.
Yet 'tis not new—the breaking day—
But an old, old thing in a new, sweet way.

The orchard blooms; and never the skies
A season saw in fairer guise.
Yet leaf and flower and trembling spray
Are but old, old things in a new, sweet way.

The warbler sings; and I trow the air
Ne'er quivered to a note so rare.
Yet every merry songster's lay
Is an old, old thing, in a new sweet way.

Why dive for tropes? For the pearl you get
Is only burnished and reset.
Art, dreamer, is to do or say
Just the old, old things in a new, sweet way.

This is the spirit, likewise, which we, as physicians, should seek to carry into the world of our work. You will not often be called to new, unchartered tasks. Humanity with its age-old ills will call you. However much science may put new appliances in your hands, you must still respond with the age-old spirit of service. Some day you will be called to usher a new life into this old, old world. What is so old, yet what is so new as a new-born babe? Once again the Creator says, "*let there be light,*" and eyes that have never opened before, behold the light; and lips that have never spoken suddenly cry out for help.

To meet these old duties, there are needed certain qualities, old as human virtue, yet full of new charm and power to those who acquire them.

Foremost among the qualities that make for success, I should like to mention that mental attitude which may be described as research. The chief aim of higher education is to make us careful investigators and wise observers. Continuous study, therefore, upon all phases of disease, as causation, pathology, symptomatology, and treatment are necessary, not only in the next few years, but through life, if you desire to reach the more advanced ranks in your profession. For this reason I cannot recommend too strongly the advisability of serving a hospital interneship. The experience gained by such service is of inestimable value in fitting yourself for the exigencies of general and special practice. After a year or more spent as hospital assistants under skilled men, you will have at the start a basis of confidence for your private work.

This spirit of research also indicates the open mind and what should be the latitude of medical beliefs. You have been taught that *similia similibus curentur* is the great law of cure. Undoubtedly in our minds that is near the truth, but in the minds of many others this has not been established. Do not in the least suppose that all others who do not agree with you are mistaken in all their deductions. That there are other ways and means of assisting Nature in her healing and restoring processes no none doubts, and I believe that it is our duty as true physicians to acquaint ourselves with all the ways and means discovered, and to use them with perfect freedom. Failing in this we do not measure up to the true standard of our profession. It is truth, not dogma, that we seek. We are not likely to find new truth if we think we possess it all.

The great discoveries of the past few years in the field of medicine and surgery only foreshadow still greater discoveries to be made by the disciples of research. Gold and silver were in the rocks of Nevada's mountains long before the surface was broken and their presence revealed. Great truths are still hidden in our pathways, almost within our grasp, it may be, but needing the strong, penetrating rays of science to be made clear. We hope that some of you may be investigators who shall bring new truths to light, and thus make your names enviable. The world owes a vast debt to the earnest, patient, painstaking men and women of research, who without wealth or worldly advantages, have made the discoveries which have taught us how to combat and conquer disease.

May I also urge upon you the cultivation of that old but priceless virtue of patience? Probably there is no calling that does not require patience. It is doubly true of our profession.

It is worth remarking that patience is always an element of skill. One cannot be skillful in the highest degree unless he is patient. The physician, more often the surgeon, must work rapidly, and both must always wait patiently for results. Nature cannot be hurried. She works with infinite patience, but with undeviating certainty. It is from her, therefore, that we learn the lessons of patience. Sometime you will have done your utmost, you will wait anxiously the results of your treatment. There is nothing then but patient, careful watching. Any evidence of impatience on your part may work grave harm.

You will need this grace also in dealing with the individuals who come under your care. Sick and fretful children, numerous victims of nervous irritability, the weak, the bereaved, the senile— all these must receive at your hands careful and patient treatment. Do not let your thought of others interfere with the individual case that is in your hands. While you are with him treat him as if there were no others, and in your treatment do not despise the medicinal value of kindness. Though not often a remedy in itself, it is an excellent adjuvant for effective administration with many medicines. The physician who can listen patiently when it is necessary "while the stream of tribulation flows," who can speak gently, and keep on hand an unfailing supply of kindness in the midst of the vexations of his daily work, has acquired something which the schools cannot teach, but which the most learned teacher cannot scorn. At the very beginning of your professional career you are likely to start on a road that leads either towards a patient, kindly habit, or away from it. Let me caution you, therefore, to take the right road at the start.

One other familiar quality I would like to mention. It is charity, "the greatest of these." There are certain to be many demands upon your benevolence. Some of them will be worthy, some will not. It is small credit to a physician if he is never imposed upon. It is our task in life to visit the sick and the injured. While we are not called upon to put ourselves in the way of being imposed upon, we are, nevertheless, in the world to minister to the physical, the mental and sometimes even to the spiritual needs of humanity. It was the fine saying of the Great Physician, "I am among you as he that serveth."

But we need to remember that mere benevolence, the doling out of charity, is the lesser part of real charity. More and more society is seeking to rid itself of the prolific causes of human misery and disease. This is what is more familiarly called scientific charity. With this great spirit no one should be more in sympathy than the physician. Our profession aims constantly at

prevention. Our profession is the only one that is really seeking to eliminate itself. It is therefore a part of charity for you to co-operate sympathetically with all the agencies in your community for caring for the poor, the defective, the needy, and with all those movements which seek to improve the conditions under which people must live and maintain their health, and work out their destinies. These qualities, familiar as they are to us all, suggest a well rounded equipment. The enlistment of the head, the hand and the heart in your work,—the head for research, the hand for kindness and the heart for charity.

We bid you Godspeed and wish for you all, as you seek to develop these qualities, the best of success.

VACCINATION

By Elwin D. Lane, Ph. B.,
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Definition. Vaccination is the inoculation of vaccinia by means of the virus of cowpox, horsepox, and human smallpox, and has for its object the production of a pox, with general symptoms, followed by more or less complete immunity against attacks of smallpox.

History. It was customary before the discovery of vaccinia to inoculate the patient with as discrete a case as possible of variola the fluid being taken from the pustules, and inoculated in the same manner as in the arm-to-arm vaccination. After four days a vesicle appeared, which later changed into a pustule which was called the "mother pustule," surrounded by secondary pustules. In about seven days the fever of the invasion made its appearance, and the variola ran its course. As a rule, the patient inoculated with discrete variola became immune, and had cause no longer to dread the terrible consequences of the epidemic scourge, smallpox. Unfortunate results sometimes attended this form of inoculation which resulted in either a severe case of variola, or ended fatally, and in addition and of even greater importance these cases became new epidemic centres which resulted in the spread of the epidemic rather than its suppression, so that vaccination was preferred. Vaccination was slow in being adopted and required an act of Parliament before it was substituted for variola inoculation.

To Jenner belongs the honor of the introduction of the vaccine and its popular use, but not its discovery, and with thus

giving to the world one of the greatest benefits to which humanity is heir. Because of Jenner's official position as inoculator of his own district (Gloucestershire) he became well versed in the popular tradition that the milkmaids who came in contact with the cows usually contracted a pustular disease known as cowpox and that they rarely if ever contracted variola. This observation led him to perform the following experiment. He inoculated a child eight years old with the fluid obtained from the pustules of a milkmaid which she had contracted while attending her cows. Two months later this same child was again inoculated but this time with the virus of variola, but the child did not contract variola from this last inoculation. This in brief was the discovery of vaccination about which Jenner, in 1798, published his first paper.

Vaccinia (vacca, cow) originates from an eruptive disease attacking cows and especially young calves of two or three months and is known as cowpox. The characteristics of this disease are the large umbilicated and flat pustules on the udder of the animals. The horse also suffers from this same condition except that the pustules are situated around the nostrils, and in the cavities of the nose and mouth, and also on the lower part of the legs, with abundant secretion. This like cowpox has marked general symptoms and has been called horsepox (Jenner called it " Grease ").

Vaccinia is the inoculation into the human species of the virus of cowpox, and it prevents variola. The inoculation of horsepox produces the same results. The questions naturally arising are: 1. Is this a disease special to the bovine species? 2. Is it a modified virus of variola? For an answer to these questions I will quote the conclusions of Chauveau. "1. Vaccinia, no matter how exalted its virus, never changes into variola. 2. We may inoculate the cow with variola, but it never becomes vaccinia in passing through the bovine species. The disease is variola, remains variola, and gives rise to variola, if it is reproduced in the human race. This statement also applies to variola inoculated into the horse and transferred to man. The virus of variola and that of vaccinia are therefore of different natures. On the other hand horsepox and cowpox are of the same nature, although the vaccine grows better in the cow than in the horse."

Depaul was convinced of the identity of variola and vaccinia. Some, not yet sufficiently conclusive experiments made in Germany and Switzerland also tend to identify these two diseases. *Clinically* however we see clearly that vaccina and variola are different diseases, for variola is essentially contagious and epidemic, while vaccinia is never contagious and epidemic. (Bousquet,Hervieux.) They may run their course simultaneously in the same animal or indi-

vidual. In the millions of vaccinations that have been performed vaccinia has never recovered its virulence and appeared as variola. They have not returned to the parent form which is so characteristic of the attenuated virus, of which examples are fairly frequent with the most perfectly prepared artificial vaccine, such as the vaccine from the anthrax pustule made by Pasteur.

Vaccinia (cowpox). Vaccinia is a febrile disease produced in man by the inoculation of a virus obtained either from the cow or a person who has been inoculated. The disease is communicated by inoculation either intentional or accidental, and not contagious in the common use of that term. The fact, however, that vaccination establishes an immunity against attacks of smallpox, although the nature of the protection is imperfectly understood, is one of the best proven facts of medical history.

Choice of Lymph. The use of bovine lymph rather than humanized virus is nearly universal. This has greatly lessened the possibility of syphilis and other forms of disease. Another advance was made in the introduction of the "glycerinated" lymph. In the modern preparation of lymph it is taken from the calves under the most rigid aseptic precautions and then emulsified with glycerine. With the death of the few saprophytic bacteria remaining it leaves the properly prepared glycerinated lymph practically sterile. It then undergoes careful tests for all kinds of pathogenic organisms, especially the tetanus bacillus. It is then carefully preserved and distributed in hermetically sealed tubes which are not opened free from the time they leave the laboratory until they are in the hand of the physician for his immediate use. After all the lymph has been obtained from a calf and properly labeled, the calf is then killed and carefully examined for any disease, and if none is found the lymph is preserved. Because of the practical advantage of the glycerinated lymph it has been officially adopted by the governments of the United States, Great Britain, Germany and many other countries.

Time for vaccinating. The age and general health of the individual must always be considered in selecting the time for vaccination. It should be avoided during dentition, or in very delicate infants or those who are syphilitic or who are suffering from eczema or any other form of active skin disease, unless they are exposed to smallpox, and then their chances for life are greater if they are vaccinated. The constitutional disturbances being less in infancy than in later childhood, it is a good rule to vaccinate every healthful infant when his nutrition is well established, which is usually about the third month.

Re-vaccination. It is impossible to state definitely the duration

of the protective power of a single vaccination. It is, however, quite universally agreed that there should be one vaccination in infancy, another at puberty and another at from the twentieth to the twenty-fifth year of age. If there is an epidemic it would be wise to vaccinate all those who have not had a successful vaccination for five years.*

Method of vaccinating. It is better to vaccinate in one place than to make two or three inoculations. If more than one is made they should be at least an inch apart. Vaccination is distinctly a surgical operation and should always be treated as such. Had this fact been more fully realized in the past and treated accordingly, there would have been less lives needlessly sacrificed and less enemies to vaccination. The part selected for this operation should be first thoroughly scrubbed with soap and water, then allowed to dry, after which alcohol should be applied and it allowed to dry. The part of the body selected is usually on the outer aspect of the arm at the insertion of the deltoid muscle, on the arm less frequently used. Those whose occupation or position in society demand that they retain their primitive beauty unscarred in the more exposed parts of their body have submitted to being vaccinated in less exposed places, and the legs and thighs have become the popular locations for the inoculation; but even here some experience some difficulty in keeping their vaccination scars invisible, depending upon their occupation. In infants the leg at a point on the outer aspect of the left calf about the junction of the middle with the upper third is a favorite location because it can be more easily cared for and the limb more easily kept at rest.

Among the many good methods adopted for use in applying the vaccine I think that prepared by the Massachusetts State Board of Health is one of the best, which, briefly, is as follows. Perhaps the simplest procedure is to use a common sewing-needle previously sterilized in the flame. Scarify with it an area not exceeding 1/8 of an inch in diameter. Two or three scarifications are commonly made, drawing as little blood as possible. To remove the vaccine from the capillary tube, push the tube completely through the rubber bulb. Then break off or crush both ends of the tube and draw one end into the bulb. Then to force out the drop of lymph seize the bulb between the first and second

* If the first inoculation is unsuccessful in infants, at least three trials should be made with good virus, and in the event of further failure, after a year, vaccination should be repeated. A failure to inoculate does not mean, as is popularly believed, insusceptibility to smallpox, but is usually caused by inert vaccine.

Dr. Holt reports two cases where in one the seventh and another in which the thirteenth inoculation was successful after previous failures. Occasionally there are seen people who cannot be inoculated at all.

fingers and compress the bulb with the thumb, and this slowly forces out the lymph. The vaccinated area should be kept bared for a short time to prevent the wiping away of the lymph before absorption has taken place. If any protective covering is used it should be applied so that as little friction as possible will result, and it must be removed and the lesion inspected at the end of the first week. It is not necessary to apply a shield if the wound is allowed to dry. The limb should not be washed for twenty-four hours after the operation.

Normal course of vaccinia. The course of a normal vaccination pox is quite uniform, and one which fails to follow this uniformity should be regarded with suspicion in relation to its protective power. On the third or fourth day after the vaccination there appears a small red papule; during the next twenty-four hours a small vesicle appears which during the next two or three days continues to enlarge, reaching its full development about the ninth day, the shape and size depending somewhat upon the character of inoculation. The vesicle is usually 1-4 to 1-2 inches in diameter, pearly gray in color, having a depressed centre. Following this during the next two days there is surrounding this and extending at a variable distance from it an areola. The areola is normally bright red in color and is accompanied by some induration, and reaches its height on the ninth or tenth day. The vesicle then dries down to a firm dry dark crust remaining two or three weeks, and then falls off leaving a bluish scar fading to white. During its height such constitutional symptoms as loss of appetite, fretfulness, general indisposition, and a slight rise in temperature are common, and last from three to four days. The lymph nodes in the axilla and groin are usually swollen and tender.

Complications and sequelæ. "A non-characteristic, over-rapid development of the vesicle, with the formation of a crust by the seventh or eighth day, or a retarded formation, requires revaccination. Injury of the vesicle causes inflammation or the formation of an ulcer. Secondary vesicles may form in the neighborhood of the pock; and very rarely there is general pustular eruption in various parts of the body, successive crops appearing for several weeks."

The possible complications are as follows (Acland):

1. During the first three days: erythema; urticaria; vesicular and bullous eruptions; invaccinated erysipelas.

2. After the third day and until the pock reaches maturity: urticaria; lichen urticatus; erythema; multiforme; accidental erysipelas.

3. About the end of the last week: generalized vaccinia;

impetigo; vaccinal ulceration; glandular abscess; septic infections; gangrene.

4. After the involution of the pocks: Invaccinated diseases, i.e. syphilis, pneumonia and nephritis are among the more serious complications. Latent tuberculosis may become active, and one suffering from eczema may have a recurrence. And malnutrition may become intensified by vaccination.

Treatment. The object of the treatment is to prevent infection. Therefore the essentials are a clean limb, pure virus, and a clean needle. The wound should be thoroughly dried before the clothing touches it, then let alone until the vesicle forms, when prevention from scratching becomes the important matter. This can be accomplished by either a sterile bandage for young children or by a small piece of sterile gauze fastened with two pieces of surgeon's adhesive plaster for older people. If the vesicle ruptures and discharges serum, dusting with boric acid will be found useful. If the wound becomes infected it should receive the same careful attention that any infected wound should receive and not be allowed to be poulticed.

Mortality from vaccinia. The mortality of vaccination is stated by Voigt, from careful statistics drawn from German sources, to have been 35 in 2,275,000 cases, including both primary and secondary vaccinations. Of the deaths, 19 were due to erysipelas, 8 to gangrene, 2 to cellulitis, 3 to "blood poisoning", and three to other causes. Tetanus may occur after vaccination, but not with proper preparation of the lymph. It seems from the above that nearly all the deaths are from causes which are preventable.

Variola. A brief history of variola is of importance that we may better understand the awful conditions in existence before Jenner's great discovery and as pointing to the possible conditions in the future, if vaccination, our only means of prevention, were prohibited. The more we know of variola the more we appreciate vaccination.

The origin of variola is not definitely known, but the traditions and histories of Eastern nations, especially of China and Hindustan, place its beginning before the Christian era. Authorities place the date of its appearance in Egypt at about A. D. 544. Some writers claim that Philo, a Jewish philosopher, mentioned it in one of his works in the first century. It appeared in Asia and Africa during the sixth and seventh centuries, and in the countries of Europe during the ninth and tenth centuries. Soon after the discovery of America the Spaniards carried it into Cuba and San Domingo. Its victims numbered millions in Mexico in 1527, extending from that date over the whole American continent.

Rhazes, A. D. 925-926, gives us the first scientific description of the disease, all records teeming with awful conditions resulting from this death dealing contagion. In England the annual mortality from smallpox is said to have been about 3,000 to each million of inhabitants, while in France 30,000 perished annually. In the Russian Empire it is said that at least two million inhabitants died in a single year. "From 1783-1799 inclusive, one tenth of the entire death rate of Berlin was from smallpox alone." Dr. Lettsom of London calculated that in Europe annually two hundred and ten thousand people fell a prey to smallpox. In Ceylon whole villages were abandoned. In Quito, South America, more than one hundred thousand Indians were destroyed in a single year in that province alone.

"It was no respecter of persons. Kingdoms and empires were thrown into confusion by the death of their crowned heads. Among its royal victims history mentions five descendants of Charles the First of Great Britain, viz.: Henry, Duke of Gloucester; Mary, wife of the Prince of Orange and mother of William the Third; Charles, Duke of Cambridge, in 1677; Mary, Queen of England and wife of William the Third, in 1694; and the Princess Mary Louisa in 1712. Also five descendants of Louis XIV of France, and in the same period Joseph I, Emperor of Germany, in 1711; Peter the Second, Emperor of Russia, in 1730; a Queen of Sweden in 1741; Henry, Prince of Prussia, 1767; Maximilian Joseph, Elector of Bavaria, in 1777."

Macaulay, the English historian, did not exaggerate when he said that smallpox was "the most terrible of all the ministers of death," and adds in speaking of it in the seventeenth century, "Smallpox was always present, filling the churchyards with corpses, leaving on those whose lives it spared the hideous traces of its power," for it is said that two-thirds of the pauper blind in England were made so by this disease.

Dr. Cyrus Edson, Chief Inspector of Contagious Diseases, of the New York Health Department, in his Annual Report of 1890, said: "Smallpox is fatal to a large proportion of those whom it attacks. It kills from thirty to forty per cent of its victims."

Not a decade passed, during the seventeenth and eighteenth centuries, that did not witness epidemics of smallpox. Seven to nine per cent of all the deaths of England were due to it. Its great destructive power was visited alike on all classes in every station in life.

"In the sixteenth century, in Mexico, 3,500,000 persons died of smallpox."

In 1734 nearly two-thirds of the population of Greenland

was swept away by an epidemic of smallpox; and in Iceland out of a population of 50,000 people 18,000 died.

Washington Irving and others have plainly pictured its horrors which the disease has wrought among our North American Indians, sweeping away whole tribes at once.

One of the most vivid pen-pictures of the devastation wrought by smallpox before the introduction of vaccination is given by Professor Wernher, in his work entitled, "*Zur Impffrage*" some of which I will quote.

"'Before the introduction of vaccination smallpox had become a permanent disease which never entirely ceased in any one year, and every three or five years became a great epidemic.

"'In non-epidemic years one-tenth of all mortality was due to variola; in epidemic years, one-half.

"'Very few men escaped smallpox till old age; almost every one sickened at least once in his life of this horrible, murderous disease.

"'Countless mortals were maimed by loss of sight. Of new-born children one-third died of smallpox before their first year; one-half before their fifth year of life.

"'There was no family which did not have heavy losses to deplore.

"'In the country the mortality was greater than it was in the city.

"'Physicians and the government possessed no means against this evil. Isolation was impracticable, from the wide-spread nature of the disease. Men accepted the pest as an unavoidable fate.

"'The loss which Europe suffered from this one disease amounted to many millions. This was the principal factor which deterred or kept back the population from progress;' and to lead us back to the above conditions is the effort of many ignorant mortals of the present day.

"The following table is compiled from the Report of the Society on Epidemics of London, and shows the mortality from smallpox during periods before and after the introduction of vaccination. The periods are not in each case the same, but they are those of which it was possible to obtain reliable information."

APPROXIMATE AVERAGE ANNUAL DEATH-RATE BY SMALLPOX PER MILLION

Period Relative to which Data are Given.	Country or City.	Before Vaccination.	After Vaccination.
1777-1806 and 1807-1850.	Lower Austria.	2,484	340
1776-1780 and 1810-1850.	Prussia, Eastern.	3,321	56

1780-and 1810-1850.	Prussia, Western.	2,272	356
1781-1805 and 1810-1850.	Berlin.	3,422	176
1774-1801 and 1810-1850.	Sweden.	2,050	158

"In the table, of which the foregoing is a part, twenty-one other cities or states are given, each of which shows the same remarkable reduction. Attention is particularly called to Berlin. The death-rate from smallpox there was 3,422 per million living inhabitants during the twenty-four years before the introduction of vaccination, and 176 per million in the forty years after that time."

"In the city of New York the following table, compiled from the yearly records of the Health Department, shows the death-rate from smallpox from 1869 to 1888, inclusive:"

DEATHS FROM SMALLPOX

Year.	Deaths.	Population.	Rate per 100,000.	Year.	Deaths.	Population.	Rate per 100,000.
1869	203	927,728	21.90	1880	31	1,206,299	2.57
1870	805	942,292	31.08	1881	453	1,242,533	33.30
1871	805	954,636	84.32	1882	259	1,279,560	20.34
1872	929	967,142	96.16	1883	12	1,317,691	0.91
1873	117	979,811	11.94	1884	0	1,356,958	0.00
1874	484	992,646	48.75	1885	26	1,397,395	1.86
1875	1280	1,041,886	122.85	1886	31	1,439,037	2.15
1876	315	1,072,934	29.36	1887	99	1,481,920	6.68
1877	14	1,104,907	1.27	1888	81	1,526,081	5.31
1878	2	1,137,833	0.18	1889	1	———	——
1879	25	1,171,740	2.13	1890	0	———	——

"The results of the work of the Vaccination Corps did not become apparent until 1876."

"The death-rate from smallpox previous to 1876 was 59.57 per 100,000. Since that year it has been only 8.38 per 100,000."

"In Paris, where vaccination is not energetically enforced, the death-rate from smallpox ranges from 136 to 10.1 per 100,000 inhabitants."

"In the principal German cities where the laws on vaccination are enforced with rigor, the death-rate from smallpox is 1.44 per 100,000 in inhabitants."

"In London, where compulsory vaccination is rigidly enforced, the death-rate from smallpox is only 0.6 per 100,000."

He concludes his report by saying that during a period of over nine years of service in the Health Department of New York, "I have never seen a case of smallpox in a person who had been vaccinated successfully within five years, and the number of cases

I have seen mounts into the hundreds." During that period he adds that he has seen only one inspector of contagious diseases contract smallpox, and he was the only inspector who disbelieved in vaccination and refused to have it performed on himself."

Argumentation. It is my purpose in the few closing pages, to enumerate and discuss some of the arguments that the enemies to vaccination have adduced since its discovery by Jenner.

1. They argue that the medical profession is not a unit in its belief on the subject of vaccination, which they proceed to conclude is good evidence of the unreliability of vaccination to do what its friends have claimed for it. It is not at all strange that there should be a diversity of opinions on the subject as worldwide as this one. Do we find the medical profession perfectly agreeing on questions other than this one? It is not at all unusual to hear and read of some eminent practitioners who absolutely refuse and even ridicule the practice of giving an anæsthetic in normal obstetrical cases, while others equally as eminent will ridicule its disuse as strongly. They are also divided in opinion regarding the use of cocaine, surgery, sizes of the doses in drugs and various other things, and yet the vast majority do believe in vaccination as a means, when properly performed, of preventing smallpox. It can with equal truth be said that the medical profession today as a whole is more united on the belief of the efficiency of vaccination as a preventative of smallpox than upon any other similar medical question of the twentieth century. Why should our opponents expect more from our profession on this question than on any other?

2. Our anti-vaccination friends are bitter in their opposition to *compulsory vaccination.* They claim that such a thing as compulsion in vaccination is unconstitutional, being an infringement upon the personal rights of the individual. In their argument they overlook the fact that there are many other people living on this old world of ours besides themselves and hence that their own personal liberty must be in ratio to the number of people in the world, who, they are slow to see, have a right to just as much personal liberty as they have themselves, and that in the best ordered governments the *personal* rights of the individual are respected as far as possible but must never be considered above the rights of the *community.* A man has a *personal* right to carry a revolver, but for the safety of others he is compelled to forego the pleasure, and if he continues to become a lawbreaker and is consequently fined or imprisoned, or both.

The public school system is one of our greatest American institutions and is doing a great work in training the American

youth of to-day to become good, intelligent and worthy citizens of this great nation. It must seem peculiar to those who have considered it that when an institution is established and maintained at the public expense for the benefit of the youth of our land, so many laws should have to be enacted, and a large core of officers maintained to compel the scholars to attend our public schools. In fact the laws are more lenient regarding the compulsion of vaccination than they are regarding the compulsion of school attendance. The law is a terror to the evil doer but a protection to the obedient. The same argument that the anti-vaccinationists give for the removal of *compulsory* vaccination would apply equally in the removal of *compulsory* education; but who but the most ignorant would think it wise to do either?

3. The after effects of vaccination are injurious.

This argument is being used less against vaccination than formerly. With the increasing caution in the purity of the lymph, the operation, and the after-care of the patient, and the decreasing use of humanized virus, with the arm-to-arm method, there are very few cases that have any disagreeable consequences. It has been a very convenient thing for the anti-vaccinationists to claim that if one who had been previously vaccinated should later become sick the cause was necessarily vaccination. I will admit without hesitation that there are complications, but according to the best authorities they are decreasingly few. No one knows whether the lymph was at fault or that there were not latent disease conditions in the patient's system which vaccination merely precipitated and hence became the exciting cause (these latent disease conditions might have come without vaccination) or that had some operation been performed other than vaccination these same complications might have followed. It would be extremely unwise to discontinue vaccination because *one* case in every 65,000 proved fatal from some more or less preventable complication; when without this protection, when the present period of immunity resulting from vaccination expired, there would be little if anything to hinder the former widespread devastation to again sweep over the world, causing the fearful slaughter of the innocent children.

4. We are again told by them that statistics are unreliable.

It is rather peculiar that any statistics which seem in any way to be to the detriment of vaccination are freely used by them, but when the friends of vaccination use the mass of reliable statistics easily obtainable and interpret them in the only intelligent and logical way they can be interpreted, our opponents hasten to declare that statistics are unreliable. It is said by some that statis-

tics can be made to prove anything. This is in a measure true, but it may be added that they can only be made to correctly prove the truth in the hands of the honest. To disprove statistics is in a measure to discredit history of which they are a part.

5. We are told that the medical exponents of vaccination are "self-seekers," "penurious," "money catchers," "in it for the money they get out of it," etc.

This statement like the others is wholly untrue and can only be the product of a falsely informed and inflamed mind. There are some in all professions who are "self-seekers"; the same is true of our opponents. The medical profession as a whole are proposing laws and entering heartily into the modern move of preventive medicine, which does in a large measure deprive the doctor of much of his legitimate income. Who are so narrow as to claim that the medical profession is seeking the retention of compulsory vaccination that the physician may get the fifty cents to one dollar vaccination fee once in five to ten years when if compulsory vaccination were abandoned he might earn from twenty-five to fifty times more with the same patient?

6. It is claimed by some that improved hygiene has done more to prevent the spread of smallpox than vaccination.

Hygiene, which is being increasingly recognized as a therapeutic agent, has had all the chance in the past ages to have proven its efficiency against the epidemics of smallpox; but not in a single instance has improved hygiene been found to check the course of these smallpox epidemics. The various rulers and those in the highest society of the past under all the most improved hygienic surroundings of their day have suffered alike with their less fortunate subjects, the peasants, before the onrush of this plague. Wealth, climate, social position, nationality, sex, or creed have individually or collectively been no check to this human enemy. Vaccination alone stands as the conqueror of this fearful epidemic scourge, smallpox.

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M.D.

Case VII.—C. Diagnosis: Congenital Ptosis.

We all make our mistakes, and the truly American spirit demands that we frankly acknowledge them. It must be confessed that at the time this case went to print no such diagnosis was entertained except as a secondary factor. So little was it consid-

ered that almost nothing in the description as given could lead to this diagnosis. But this in itself is a good lesson and again emphasizes the importance of prolonged and searching inquiry into the details, physical and mental, of every case presenting the Epileptiform Complex.

The history of this patient so strongly suggests hystero-epilepsy, that it was not until a thorough search for possible "psychic traumata" had utterly failed to reveal any sufficient shock which, through suppression, might act as an "inverted pain" that such idea was abandoned.

This may seem strange, yet the attacks certainly appeared hysterical and were so considered by some very good physicians who had cared for the patient.

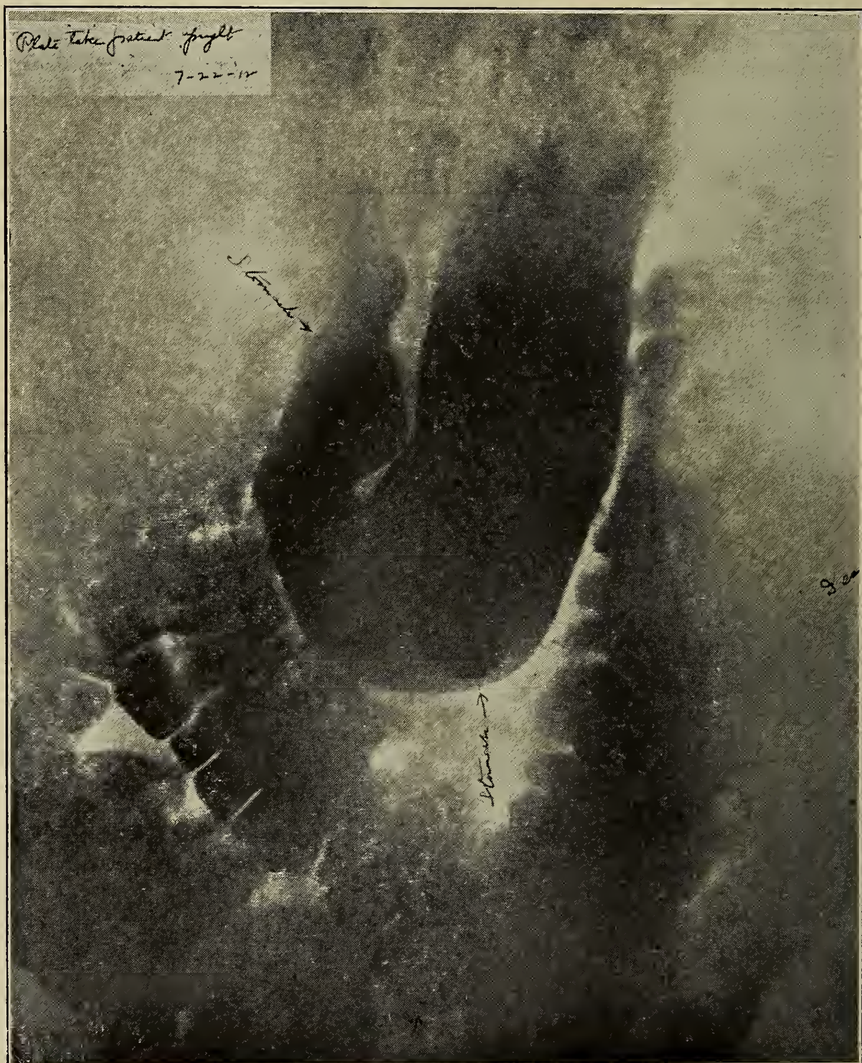
While under observation the attacks became less convulsive and tonic, and began to take the form of a delirium. It was observed that the rigidity always began in the right neck muscles, and that if the spasm was forcibly broken and the head flexed, the patient usually came to herself rapidly, opened her eyes and spoke. This led to having X-ray pictures of the neck taken with the thought that a possible slight caries of the vertebral bodies might be producing congestion of the cervical meninges. This was rendered further probable by a positive tubercular skin test.

The plates and patient were taken to an orthopedist for interpretation, with this interesting result.—He pointed out (1) that measurements of the chest showed that the patient was standing in such a way that with each expiration the lungs were practically emptied, i. e., were in a position of forced expiration instead of being as they should be, in repose, halfway between expiration and inspiration; (2) that the angle of the ribs below the ensiform cartilage was acute instead of obtuse; (3) that this depression together with the compensatory caudosis in the lower dorsal spine so narrowed up the upper abdomen as to allow little space for proper digestion and assimilation, and jammed most of the bowel down into the false pelvis, producing the peculiar bulging lower abdomen so typical of congenital ptosis. And (4) most interesting of all, that the abnormally forward dorsal spine necessitated a backward twist of the upper dorsal region and then a bending forward of the cervical spine at such an angle that if the skull set normally on the atlas, the patient would have to look at the ground close by. Now in order to look straight ahead, the chin must be extended, thus narrowing the foramen magnum, and this position maintained for any length of time so fatigued the ligaments and disturbed the normal relations of the medulla and possibly, by pressure, the circulation in the vertebral arteries,

especially where they pass through the posterior occipito-atlantal ligament, as to result in the periods of delirium, and tonic spasm. It is interesting with this explanation in mind to recall that from childhood the patient had had spells of difficult breathing and that her attacks have always begun with a sense of suffocation and palpitation,—just what one would expect in any interference with the circulation in the medulla; also that the bad attacks have usually followed prolonged exertion, i. e., that which followed the ten-mile walk when she was sixteen.

There is another explanation of the faints, suggested by the orthopædist, and that is that the mal-position of the abdominal viscera brings about some change in the solar plexus which acts much as a blow would do. The vasomoter disturbances accompanying the attacks seem to lend weight to this theory.

The accompanying X-ray picture shows well the ptosic stomach and transverse colon in the case.



The subcarbonate of Bismuth was taken by mouth and as an enema.

This whole question of congenital ptosis is in the construction stage and still in the hands of a few specialists, but it should be thought of in many obscure and stubborn nervous cases.

The diversity of symptoms which these patients may present are as great as those found in hysteria, and we have already seen several such cases that had passed in good hands for hysteria and psychasthenia. Insomnia, hyper-fatigue, sensitive spine, dyspepsia, constipation and shifting neuralgic pains, form some of the most common physical symptoms, while mentally these patients are frequently excessively bright and active and gifted with a wonderful memory. The cure consists in restoring the physiological poise.

The etiology is summed up in the expression "reversion to a primitive type, or faulty evolution."

Happily much can be done for these patients through suitable braces and supports, but only one skilled in their construction and adjustment can achieve the best results. With this diagnosis as a basis of therapeutics the patient is already improving.

Case VIII.—For Diagnosis.

The patient is a woman forty-eight years of age, born in Boston. Her parents are living and well. The family history is negative.

The patient was a well girl of nervous temperament; had measles and scarlet fever. Graduated from high school at sixteen years and took up bookkeeping, which she continued until she was thirty-four, when she was married. She was also a singer of some ability and did church and concert work.

At the age of sixteen menstruation was established and was painful, obliging her to go to bed for a day or two. When thirty-three she had a severe sore throat with occlusion of the right eustachian tube and much prostration which necessitated her staying away from work for five weeks although she did not go to bed. Married a year later and at thirty-five had a still-born child. Since then she has not conceived. At thirty-nine menses stopped, reappearing six years after for one year. She has had three operations,—one for cystocele and rectocele, one upon the nose, and one suspension of uterus.

The patient thinks that her present illness began four years ago. At that time she developed coldness of the extremities, palpitation, headache, swelling of the sub-cutaneous tissues, enlarge-

ment of the nose, stagger-gait and great dullness of mind,—thought that she was dementing. She dropped everything she handled and her hair came out. She went from 168, her usual weight, to 205 pounds. Her physician thought that she had myxodema and put her upon thyroid gland. She rapidly lost weight and a year later weighed 155 pounds. Consultants who saw her then decided that she did not have myxodema, and under another line of treatment she improved.

In November last she saw another consultant, who described her condition as follows: "For two months severe headache and staggering, loss of sense of smell, gain in weight and an attack of diplopia. Examination then showed some anæmia, normal urine, sluggish pupils and changes in the reflexes,—a condition resembling myxodema, ptosis of left eye-lid, diplopia, severe headache, haziness and pallor of optic discs, and contraction and interlacing of the color fields. Staggering and sleepy attacks, unequal knee-jerks, right Babinski. An X-ray showed a marked thickening and increase in the size of the sella turcica. Under treatment she was quite well between January and March of this year except for some depression and sleeplessness."

"For two or three days previous to March 18th, 1912, she had dribbling urine. On that day without loss of consciousness, she awoke from a short sleep with thick speech and a right facial paralysis of central origin. Blood pressure normal; no aphasia; tongue came out to right; left Babinski; weakness of right external rectus muscle; pupils slightly unequal; numbness of right hand."

"On June 29th ptosis of left upper eyelid; gradually became more depressed and once attempted suicide with gas."

The physical picture at the present time is similar, but improving. Mentally, she cries without provocation, but less than formerly. Associative elaboration is sluggish and often nil. (No association for eight out of twenty words.) Unconscious fabrication is common; memory is good, as is attention. She can repeat test sentences and stories accurately. The voice is of a peculiar unnatural pitch in monotone and speech is staccato, with frequent repetitions of the same phrase. The ptosis is improving.

What sort of a lesion would explain the symptoms and how would you treat it?

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all com munications relating to advertising or other business, should be sent to the Business Manager 422 Columbia Road, Dorchester, Boston, Mass.

The GAZETTE does not hold itself responsible for the opinions expressed by its contributors

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ARTHUR H. RING, M.D.

Reports of Societies and Personal Items should be sent in by the 15th of the month previous to the one in which they are to appear. Reprints will be furnished at cost and should be ordered of the Business Manager before the article is published.

WORLD WIDE HOMŒOPATHY.

When a great thought is born men instinctively ask, "Who is the father of it?" Not infrequently the weight of the idea is estimated by the greatness of its author.

The subjoined letter from Dr. George W. Burford of London, England, contains a great thought. It is world wide in its scope, it is thoroughly feasible, easily possible, and its accomplishment means the triumphant establishment of Homœopathy in the medical world.

To the few who may ask, "Who is Dr. Burford?" we reply, "He is one of the leading if not *the* leading homœopathic surgeon of Great Britain. He is more than a surgeon; he is first and foremost an homœopathic physician, he is a man of scholarly attainments, influential in the circle of England's most influential people, and an indefatigable exponent of Homœopathy.

As Ex-President of the International Congress of Homœopathy he is known to all members of that body and to the members of the American Institute of Homœopathy. We might almost say Dr. Burford is the foremost homœopathic physician of the world. Hence any suggestion coming from him must carry its full modicum of weight.

A few sentences from his letter stand out with such startling force we quote them apart from the letter.

"If the enormous revenues of the medical establishments for Education, for Research and for Treatment in this and other countries had energized Homœopathy, the world would have profited as much in the last fifty years as it has from antiseptic surgery."

"We have a bond that invites all diversities of race and lan-

guage, that transcends all considerations of space and time. The cry of Humanity for the best that can be given to restore its life and relieve its pain daily rings in our ears. We hold ourselves to be in the van of movement and progress; yet we remain discrete bodies, allow ourselves to be taken in detail and frozen out as sects when we should be the predominant partner. Why not avail ourselves of that disciplined union of parts which made Cæsar's Legionaries the conquerors of the world?"

"Thus there came to us the statesman's conception of unification, joining together in a free and flexible union the forces of Homœopathy over the civilized world, each for all and all for each."

We earnestly wish that every homœopathic physician in this broad land might read Dr. Burford's letter and then be ready to act on the suggestions submitted:

Mr. President and honored Colleagues:-

Allow me as Ex-President of the International Congress to send cordial greetings to the American Institute of Homœopathy and to express my great appreciation of the courtesy of this great organization in receiving a contribution to its proceedings from over seas.

The subject to which I invite your sympathetic consideration is

HOMŒOPATHY—AN INTERNATIONAL OBLIGATION.

To this great assembly, the mother of homœopathic parliaments, eyes wide with interest are at present turned the world over. The vast homœopathic vocations and developments which it represents give this Institute proud pre-eminence among similar assemblies. The word spoken in its deliberations today flies over the whole homœopathic world tomorrow, and whether it will or no, the American Institute of Homœopathy is born to greatness. It is the central orb in our firmament, and all lesser stars feel the gravitational pull of its focal mass. All hail to the American Institute!

Nothing is foreign to the scope of its deliberations which makes for homœopathic enlargement, in big or little. Homœopathic science and homœopathic evolution are among the causes it nurtures; as also is homœopathic politics; and it is to plead for the creation of an all-necessary alliance among the powers in Homœopathy that I adress you, 3,000 miles away, though among you in spirit!

How much does Homœopathy not daily lose by cleaving to the effete policy of the watertight compartment? We have a bond that invites all diversities of race and language, that transcends all considerations of space and time. The cry of Humanity for

the best that can be given to restore its life and relieve its pain daily rings in our ears. We hold ourselves to be in the van of movement and progress; yet we remain discrete bodies, allow ourselves to be taken in detail and frozen out as sects when we should be the predominant partner. Why not avail ourselves of that disciplined union of parts which made Cæsar's Legionaries the conquerors of the world?

What available confidence in the total strength of our position do we not lose by narrowing our orbit to the homœopathic being and doing each of our own country? An object lesson has recently shaped itself. Over in the Old World we felt with increasing acuteness the need of an approximately complete International Homœopathic Directory. To be insular and provincial was not enough—the homœopathic world was our province. What impetus, what faith in our future expanded and grew as the facts disclosed themselves! From the United States came a category of hundreds of public institutions in whole or in part under homœopathic auspices. From that great area in the South American territory, Brazil, came an ample narration of homœopathic physicians and institutions that, like Quintilian, positively made us stare and gasp. In Spain there came to light the fact that no less than fifty homœopathic physicians are practicing in the single city of Barcelona. These, and many cognate facts had been as a sealed book; we had no cognizance of them; they are not for the narrow self-congratulation of each nation—they are integers in the wide Homœopathy of the World.

Thus there came to us the statesman's conception of unification, joining together in a free and flexible union the forces of Homœopathy over the civilized world, each for all and all for each.

Conceive the Homœopathy of the vast continent of the United States with the unifications this Institute expresses. Conceive the non-existence of the American Institute of Homœopathy, with its centralized administration and its standing committees, its homologation of parts. Imagine American Homœopathy, which now receives the respectful homage of the world, as a series of detached and separate interests, each strictly limited by the confines of its own State. The conception, of course, is inconceivable; yet in just such a parlous state is nevertheless the World's Homœopathy of today. It consists of a series of delimited units, for the most part as separate as though they belonged to different planets. Its various sections are delimited by the purely political distinctions of race, language and locality, and each may live or die with scarcely more than the academic interest of the others. Here, it is fertile and big with the promise of a yet more brilliant day. There, from no fault of its own, it is an etiolated structure,

"cribbed, cabined and confined," and needing stimulus for growth other than its local energies can supply.

But the strength of a chain is that of its weakest link. The power of Homœopathy as an advancing cause is devitalized and weakened by its political separation, which is like a millstone round the neck of its effective progress. The Homœopathy of America and France and Germany and England should be as linked and co-ordinated a state of Massachusetts, California and the great cities of the New World.

No national Homœopathy can live unto itself or detach itself from the stream of tendency which is controlled by the volume and the force of its constituent parts. It is a world problem which we have in our own hands; it is for statesmanship of the practical kind we beg the countenance and support of the American Institute.

Has not the hour struck for us to endeavor for the leading part in the World's medical work which our science and practice justifies? Where do we bulk in the medical disposition of armies and navies, of Civil Departments and of Government Commissions? Are we ever to be manœuvred into a sectarian and subordinate position quite at issue with the warrant of our work? If the enormous revenues of the medical establishments for Education, for Research and for Treatment in this and other countries had energized Homœopathy, the world would have profited as much in the last fifty years as it has from antiseptic surgery.

The new great work for the rectification of the homœopathic position is the linking up of all the homœopathic interests over the globe in a free and flexible union. The everlasting embargo of separation must be scattered to the winds. Each for all and all for each is and must be our inspiring spirit. To this end there meets this year for the first time a Council of the best brains in the Homœopathy of Europe and America to think out and work out the problem of Federation. Its personnel has been appointed by the recent World's Homœopathic Congress, and the members from every country represented need all the inspiration and all the impetus their confrères can give them. It is anticipated that this great representative meeting of the American Institute will lead the way in wishing the American representation God-speed; and it is hoped that year by year fresh corner-stones and fresh pillars will be adjusted in the edifice of a united and triumphant Homœopathic Federation.

MENINGEAL LACERATIONS OF THE NEWBORN

It is a conservative statement that in all cases of forceps delivery a large percentage of infants so delivered suffer from more

or less intra-cranial hemorrhage. To be sure, many of these cases fail to show any ultimate effects of such lesions, but a sufficiently large number either succumb quickly or show remote effects to warrant the warning of the danger-flag. The recent discovery at autopsies of so many cases of death from meningeal lacerations does not warrant the assumption that the practitioner of today is less skilful or less careful in the use of forceps than was his predecessor, but rather that the subject is receiving careful attention both from pathologist and from the brain surgeon. A report such as the following must make even the most ardent advocate of the forceps "stop, look and listen."

In the Kiel Maternity Hospital at Leipsic, Dr. Boureisen reports the details of eleven cases out of forty-seven necropsies on the new born in which meningeal lacerations were found. Delivery had been instrumental in these eleven cases, and all had been asphyxiated at birth. Only two could be revived, and these the second day.

He speaks particularly of laceration of the tentorium which is a comparatively common source of intra-cranial hemorrhage and a very fatal one. This fact was emphasized by an observation in a Boston hospital this week, where a child was delivered by a Cæsarean section after forceps had been used for some nine hours without success. The child breathed a few times after delivery but died from evident asphyxiation. The autopsy showed a distinct laceration of the tentorium, with a large blood clot over both hemispheres of the cerebellum.

Boureisen also comments upon the dangers of swinging the child head down when it already shows signs of brain pressure. This is a common sense caution and should be borne in mind in every case of forceps delivery. Indeed, it is a serious question whether the practice is not a source of danger in every case because in the large majority of instances asphyxiation is a result of brain pressure, and even though there were no lesions the swinging of the child head downward may easily cause a laceration where there already exists an abnormal meningeal pressure. Hemorrhages into the cerebellum from a lacerated tentorium are much more likely to be fatal than when in the cerebrum, because of pressure upon the respiratory centres. Surgical intervention becomes a helpful resource when in the latter locality but is rarely helpful in the former. The findings in the autopsy room at present say clearly to the accoucheur "When in doubt put by the forceps."

OUR READING BUREAU.

The Hahnemannian Monthly, June.

1. *The Consideration of a Fundamental of our Therepeutic Art.* Haines, O. S.
   The justification in being a specialist in therapeutics, providing a man does not put forward a universal claim for his specialty. A man in active practice can not use the law of similars exclusively. The proper way to select a remedy is by means of the repertory; failure to use this is the cause of failures and dissatisfaction among homœopathic prescribers. As a diagnostician sometimes makes a diagnosis on one symptom, so a similar can sometimes be prescribed from one symptom, but only rarely. The individual peculiarities should be considered first in using the repertory, after which the particular symptoms present in the various parts of the body should be taken up. A common error is to lay too much stress on common symptoms such as sensitiveness of an inflamed part to pressure.

2. *Drug Pathogenesy and Homœopathy.* Seibert, W. A.
   The Authentication of the Homœopathic symptom is the greatest work before the present-day homœopath. The term "supplementary proving should be used in place of "reproving." If Homœopathy is a science we must have one materia medica; i. e. materia medicas must agree. The paper is an incentive to study Homœopathy in a scientific spirit.

3. *Cinchona, Ferrum, and Arsenic in the Anemias.* Yeager, W. H.
   Cinchona: secondary anæmia is debility, lowered blood pressure especially from a decreased volume of blood, aural and visual disturbances, throbbing headache, diarrhœa.
   Ferrum: (the most abused drug), chlorosis, a decreased color index, poikilocytosis. If given when not indicated it tends to produce the conditions present in chlorosis.
   Arsenic: progressive pernicious anæmia, decreased number of red cells, some leucocytosis, hæmolysis, increasing prostration, restlessness, thirst, anæmias secondary to carcinoma or other serious organic disease.
   These drugs must not be prescribed merely on diagnosis, but by careful selection.

4. *Electrotyped Homœopathy.* Hubbard, C. H.
   A certain degree of latitude should be permitted one in his conception and practice of homœopathic therapeutics. Very few homœopathic physicians employ drugs and methods other than homœopathic, because of a disbelief in the law of similars, but rather, because of a need of the necessary knowledge of the homœopathic materia medica to warrant them in prescribing in accordance with the law of similars. Failure to prescribe according to the totality of symptoms is due to an early association with pseudo-homœopathy, electrotyped homœopathy.

5. *Eczema.—A synopsis, for the General Practician.* Ealer, P .H.
   A short review of the common ideas on the subject as found in the text books, with nothing new to offer.

6. *Salvarsan and the Eye. Report from the German Literature for the Past Year.* Nagle, F. O.

7. *Acute Anterior Poliomyelitis.* Clement, E.

8. *The Abduction Method of Treatment of Fractures of Neck of Femur.* Brooke, J. A.

9. *Gastric Symptoms of Chronic Appendicitis :Their Resemblance to so-called Dyspepsia.* Hammond, W. N.

C. W.

The North American Journal of Homœopathy. July.

1. *Infectious Diarrhea—its Treatment.* Burt, C. E.
   This short paper deals with the common summer diarrhœa of infants, supposed to be due to the organism demonstrated by Shiga. The author gives a short review of what is said on the subject in any of the recent text books on Pediatrics. What he has to say about the phophylaxsis and hygienic treatment of this condition is that which most third year medical students and state board candidates could write on the subject. In dealing with the dietetic treatment he says: "One of the best things I know of is Mellin's Food." He fails to give us the formula of this food. Since it is well known what Mellin's Food consists of, the author would have done better to give us the composition of that food instead of advertising a proprietary product. The benefits which can be derived from prescribing such formalæ as make up the various proprietary foods is not gainsaid by the reviewer. The author advises that the infecting organism be gotten rid of by purging with calomel, salts or castor oil, thus exposing himself as an adherent to that almost obsolete idea of intestinal antisepsis. He devotes three lines to naming homœopathic remedies. The author rarely uses "stimulants," but when he does he gives brandy, a drug which almost every pharmacologist of repute recognizes as a depressant in every sense of the term.
2. *The School as a Factor in Unhealth.* Clark, E.
3. *The Spirit of Mutual Helpfulness.* Alsever, W. D.

C. W.

Journal Belge D'Homœopathie. May-June.

1. *Malaria; Etiology and Treatment.* Castellan, C.
   The author takes exception to the statement that malaria is transmitted by the anopheles mosquito, claiming that there are cases on record which have never lived in localities where the anopheles mosquito live, and cases which have never been bitten by mosquitoes. The author does not give the other side of the argument very much consideration, and omits to mention the work of Schaudin and the recent Italian investigators. The author offers a repertory for the chill, the fever and the sweating. He has had very good results in his cases with "Pyloseline."
2. *The Mucous Membrane of the Intestine.* Dewée.
3. *Homœopathic Results.* Clerc, A.
   High potency in periodic trigeminal neuralgia, eclampsia and epilepsy.

C. W.

The Medical Century. July.

1. *The Anatomical Development and Physiological Function of Waldeyer's Tonsilar Ring from a Biological Standpoint.* Gibson, L. Z.
2. *Laryngeal Tuberculosis.* Roth, A. W.
3. *The Law of Opposites.* Buckingham, F.
   An interesting article written in a scientific spirit.
4. *Eczema.* Bernstein, R.
   The continuation of a valuable repertory.
5. *The Early Diagnosis of Gastric Carcinoma.* Lyon. McL.
6. *The Opsonic Theory.* Timmerman, F. A.
   An interesting introduction on the history of medicine followed by an able consideration of the opsonic and allied theories.

C. W.

The Homœopathic Recorder. June.

1. *The Past, Present and Future of Medicine.* Haysinger, I. W.
2. *Sumbul in Cardiac Lesions.* McGeorge, W.
   Valuable in arteriosclerotic conditions; 2x dilution used.

3. *A Suggestion in Therapeutics.* Padelford, F. M.
   A case of hæmaturia treated by varous remedies with various results.
   C. W.

Iowa Homœopathic Journal. June.

Nephritis in Children. Bailey, B. F.
A consideration of a few recent investigations on the subject.
C. W.

The Clinique. June.

1. *The Triumph of the Infinitesimals in Modern Medicine.* Bailey, E. S.
   A scholarly contribution to medical literature, representing much study and original thought along a line of therapeutic investigation which is ignored by too many who profess to be interested in the science and art of Homœopathy.
2. *Prognostic Suggestions in Deafness.* Lewy, A.
   C. W.

The Critique. July.

Therapeutics of Pneumonia. Dienst, G. E.
C. W.

The British Homœopathic Journal, July, 1912.

1. *Observations on Blood-Pressure in the Healthy.* Deane, H. E.
   Personal observations on the effect of physical exertion on the blood pressure. The paper is devoted especially to a series of acrobats, gymnasts and track athletes. The instrument used by Dr. Deane is Martin's modification of Riva Rocci with an armlet of 12 cm.
2. *Blood-Pressure from a Clinical Point of View.* Moir, B.
   A pressure continuously over 160 mm. needs consideration, but as Mackenzie states we must not begin by treating the high blood pressure as if it were a disease. The heart must be given less work to do. After the physiological condition of the skin, muscles, digestion, etc., have been attended to the simillimum must be sought.
   Discussion of both these papers by Stoneham, Thomas, Macnish Blakeley, Jagielski, Goldsborough, Jones and Deane.
3. *The Importance of the Mineral Constituents of Vegetable Tinctures.* Wheeler, C. E.
   On the whole, remedies most often indicated for chronic diseases tend to be of elemental or simple chemical composition, and the remedies for acute conditions more complex i, e., vegetable drugs.. The inorganic constituents of vegetable drugs play a distinct part in their pathogeneses. Aconite and gelsemium contain Phosphorus. Avent has already shown the resemblance between aconite and Ferrum Phosphorus. Belladonna contains Magnesium Phosphorus and the character of the pain is similar. Lycopodium contains silicea and some symptoms, notably that of constipation remind us of silicea. Viola odorata contains zinc, and both are frequently indicated in hysterical nervous cases.
   C. W.

BOOK REVIEWS.

A Manual of Clinical Chemistry, Microscopy and Bacteriology. By Dr. M. Klopstock and Dr. A. Kowarsky. Only authorized translation from the last German edition, thoroughly revised and enlarged. 371 pp., 43 textural figures and 16 colored plates. Rebman Company, New York. Price $3.00.

As the title indicates, this small volume is intended as a laboratory manual for the student and the practitioner. Selected methods are given for the examination of the various body secretions and excretions and for the determination of the characteristic constituents of each. There is also a chapter on bacteriological technic.

The scope of the work is fairly extensive and, in the main, the choice of analytical procedures is good. It is to be regretted that the authors have

ignored the more recent American contributions—notably those of Felin—on the chemistry of the urine. Frequent errors of statement, while usually of minor importance, do much to impair the value of the text. To cite only one instance, in the paragraph on Nylander's test (pages 152-3) the solution is said to contain Bismuth "Subnitrite" and later, one learns that the error caused by albumin is due to the black precipitate of Bismuth "Sulphate."

In the brief announcement at the beginning of the book, the publishers state that they have complied with the request of the authors "to publish an English translation." This statement is hardly confirmed by an examination of the text. German words for each of which there is a definite English equivalent abound nor are there wanting compound words of unequivocal Teutonic origin. As examples of the first may be quoted "rest," "kalium," "brenzcatechin" and "kryoskep" while of the second, "pearl-necklacelike" is an illustration. As a kind of compensation, many well known German proper names have undergone metamorphoses, and one meets Gunsburg, Kuehnes, Essbach and Gutceit for the first time. That these are not typographical errors is attested by their frequent appearance. Inept and awkward phrases meet the eye constantly. On page 67, for one example from many one finds "In a test tube is put benzidin—a tip of a knife—. . . ." Such infelicities of phrase are inexcusable. One can only hope that the next "thoroughly revised" edition will receive drastic editing. This is the more to be desired as the text, freed from its numerous blemishes, should be a useful guide for the student.

A. W. R.

Surgical After-Treatment. By L. R. G. Crandon, M.D., Assistant in Surgery at Harvard Medical School and Albert Ehrenfried, M.D., Assistant in Anatomy at Harvard Medical School. Second edition, practically rewritten. Octavo of 831 pages, with 264 original illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $6.00 net; Half Morocco, $7.50 net.

Up to the present time there has been a conspicuous scarcity of books on the subject of surgical after-treatment. The experienced surgeon worked out his own method and by frequent exchange of experiences with his Confrères developed a more or less routine technic. But when he encountered the unusual case and wanted the testimony of many men of broad experience, and wanted that information quickly and concisely, he had nowhere to turn. To the beginner the situation was far more trying.

In the "Surgical After-Treatment" the surgeon has just what he needs in the "hour of necessity" and he has it right to the point. It is not the experience of any one man but the consensus of experience of hundreds of our best operators.

From the first chapter on "The Sick Room," "Posture" and Nurse's Chart to the last chapter on Invalid and Convalescent Food Recipes, it is full of practical, helpful instruction on the after-care of surgical patients. The paper, binding, print and illustrations are in the uniform style of Saunders' excellent workmanship.

The Practical Medical Series Vol. II. General Surgery.

John B. Murphy—Price $2.00.

The ten volumes in the year's progress in medicine and surgery, under the general editorial charge of Gustavus P. Head, M. D., and Charles L. Mix, A.M., M.D., are well nigh indispensable for the busy physician in general practice, but for the specialist one or two volumes upon the subjects especially pertaining to his work may suffice.

The surgeon cannot fail to find Volume II intensely interesting and helpful, dealing as it does with the live topics of surgical progress.

Dr. Murphy's analytical mind and practical judgment can be trusted to select the subjects most essential to busy surgeons' needs. It deals with the

last words on anesthesia, radium therapy, wound healing, surgery of the blood vessels, the bones and joints, and there is a summary of the skillful work which the author has done in this deparment of surgery. The chapter on Brain Surgery gives the latest methods and results in the operation upon the brain and spinal cord.

Other chapters deal with The Thyroid, The Esophagus, The Thorax, Mesentery and Omentum, Stomach, Liver, Pancreas, Spleen, Kidneys and Ureters. One has the feeling after referring to this volume that he has the very latest methods of recognized value placed before him. To be sure, it can be but a summary of methods and results as a book of this size cannot be a treatism, but it is complete in its scope.

Life, Death and Immortality. By Wm. Hanna Thompson, M.D., LL. D. Funk and Wagnalls.—Price $2.00.

It is most refreshing to have a physician of such mentality and wide practical experience as Dr. Thompson is possessed of discuss in a masterful manner the "old-fashioned religion" of "Immortality." After a man has been actively engaged in the practice of medicine for fifty years and has studied the human mind from all angles, his deductions must of necessity carry some weight. Any work coming from the pen of the author of "Brain and Personality," would be read with avidity, and "Life, Death and Immortality" is no disappointment.

Dr. Thompson believes most profoundly in the immortality of the human soul and an existence hereafter for all human beings, in spirit form, at least, and this belief is based primarily upon the teachings of Jesus Christ.

He believe that the resurrection of Christ outweighed all other doctrines of His personality. He believes that the body of Christ *died* as surely and as naturally as any other human body dies but that it came to life again and so he truly rose from the dead. . . . That a failure to believe that much robs the Christian religion of its one essence of Immortality and Christ of his saving power.

He says that faith in human immortality is as universal as the human race, that it is an inborn instinct existing in the lowest human being up to the highest. That it is the teaching of Mohammedanism, Buddhism, Confucianism, the early Egyptian and the late American Indians, and the Christian religion simply crystalized this vague instinct into a tangible, abiding faith by its teachings of the death and resurrection of Jesus.

To the physician whose daily insight into the weaknesses of human nature begets an almost unconscious materialism this book comes as a refreshing draught, stimulating anew his inborn belief in the "life everlasting."

D. G. W.

One Thousand Surgical Suggestions. Walter M. Brickner, M.S., M.D. Surgery Publishing Co., New York. Practical Brevities in diagnosis and treatment of Surgical diseases. By Walter M. Brickner, adjunct Surgeon Mt. Sinia Hospital—Editor in Chief American Journal of Surgery. Fourth Edition.

This is an epitome of a large work on surgery and in some respects has an advantage in that it can be so readily carried in mind. There is something about it epigrammatic which "sticks" most persistently to the brain cells and which comes for the calling when urgently needed. The suggestions are practical, terse, and give evidence of having been evolved from the minds of many practical workers after long years of painstaking observation both at the time of operating and in the end results. As an example "all cases of hernia in which there is a history of frequent urination should lead one to suspect that the hernial sac contains part of the bladder;" or, again, "watch for the development of sub-phrenic abscess when there is persistent pain in the lower chest and a dry cough several weeks after operation for appendicitis abscess."

It is a very handy little volume to keep in one's grip or pocket, to be read

at any time when one can catch a minute on the fly as one can begin and stop anywhere without losing the continuity.

D. G. W.

Laboratory Methods: With Special Reference to the Needs of the General Practitioner. By B. G. R. Williams, M.D., Member of Illinois State Medical Society, American Medical Association, Etc. Assisted by E. G. C. Williams, M.D., Formerly Pathologist of Northern Michigan Hospital for the Insane, Traverse City, Michigan. With an introduction by Victor C. Vaughan, M.D., LL. D., Professor of Hygiene and Physiological Chemistry and Dean of the Department of Medicine and Surgery, University of Michigan, Ann Arbor, Michigan. Illustrated with forty-three engravings. Price $2.00. C. V. Mosby Company. St. Louis. 1912.

This book takes up in a concise manner the methods employed in laboratory work; hence its value to the general practitioner. In the past the older physicians have known very little of laboratory methods and their importance to themselves. With such a book at hand a great deal may be accomplished in the office. To the trained laboratory worker it should be of value as a reference book.

Sex Culture Talks to Young Men. By Norman E. Richardson, S. T. B., Ph. D. Prof. of Religious Psychology in Pedology, Boston University School of Theology. A short, concise, treatment of the present day social evils with a foreword by DeWitt G. Wilcox, M.D. Published by Eaton and Haines, New York. On sale by the Gazette Pub. Co., 422 Columbia Road, Dorchester, Mass.

In this little book Prof. Richardson has put in easy reading form the essential facts which everybody should know concerning his sexual nature. He has constructed it in a conversational manner picturing the father as an elder brother of the boy and telling him in plain but understandable language those things which the boy must ultimately know in some form but unfortunately often garbled by the "smut of the street." To the many fathers who are inquiring "How best can I talk to my boy about sex nature?" we would reply, "Read this little book of Prof. Richardson's."

Four Epochs of Life. By Elizabeth Hamilton Muncie, M.D., Ph. M. The Muncie Sanitarium, Brooklyn, N. Y. With illustrations by the Rev. John F. Carson, D.D., and Royal S. Copeland, A.M., M.D. On sale by the Gazette Publishing Co., 422 Columbia Road, Boston, Mass. Price $1.50.

In this little volume Dr. Muncie has packed so many good things that the opening of the covers is akin to the opening of a treasure box. We hope that the good things will be so generally distributed that every parent in the land may become possessed of them.

In presenting those essential truths upon the subject of sexology Dr. Muncie has endeavored to make them more attractive and readable by weaving them into story form; while such a plan increases the size of the volume and thereby consumes more time in the reading, yet it serves to impress the truth in a more concrete maner and holds the reader's attention to the end.

Ruth and Robert Lynn, both graduate physicians, begin their married life with the "safe and sane" idea of living perfectly physiological lives, rearing their children after that plan and endeavoring to help the little world in which they live to do the same. The net results to them and to those who have followed them is health, happiness and that satisfaction which is greater than happiness of having been helpful to their fellowmen. The teaching of sexology as followed in this volume cannot offend the most prudish critic; it is common sense instruction delicately given but withal fully comprehensive. No child, youth or adult can possibly be harmed by such knowledge, but, on the contrary, must of necessity be greatly benefited. Every

parent should read it and if unable to grasp and digest its truths sufficiently to impart them to the inquiring child or youth, then that parent is perfectly safe in reading verbatim Dr. Muncie's instructions to such youth.

Every physician and instructor should read it and get the author's ideas of child education and medical inspection of schools. What makes the book still safer is the fact that it breathes the broad spirit of the brotherhood of man with the Sermon on the Mount as a "constitution."

Peter Ruff and the Double Four. A Book Relating the Adventures of a Private Detective. By E. Phillips Oppenheim, Author of "Havoc." Published by Little, Brown, and Company, Boston. Price $1.25 net.

In Peter Ruff we find a new and interesting character. Sharply changing the course of his career, he leaves his rather doubtful occupation and becomes a private detective. Finally he leads a most amazing secret society, "The Double Four," in the working out of good for civilization. He is calm, cool,, and resourceful, cleverly outwitting his opponents. His adventures are most unusual and thrilling. The book will appeal to all lovers of intrigue and mystery.

The demand for "Boericke's Materia Medica" was so great that the 4th Edition was inadequate to meet it. The 5th Edition, thoroughly revised, up to date, with many new additions, is now in press, and will be ready for delivery September 1st. Price $3.50 per copy. Order direct of the publishers, Boericke & Runyon, 14 West 38th Street, New York City.

SOCIETIES.

New York State Homœopathic Society, October Meeting.

The semi-annual meeting of The Homœopathic Medical Society of the State of New York will be held at Buffalo on October 8 and 9 next.

The officers and members of the various bureaus and committees are hard at work to the end that this shall be one of the most successful meetings ever held by this Society. The program committee is making every endeavor to prepare what will be pleasant and profitable for everyone who attends.

The bureau of Materia Medica will be made prominent, and will prove of unusual interest.

Headquarters will be at the beautiful new Hotel Lafayette, and the management is making every preparation possible for the comfort and convenience of all in attendance.

The visiting ladies will be looked after by a group of Buffalo ladies under the guidance of Mrs. Joseph Tottenham Cook.

The banquet on the evening of October 8 will present new and very original features, sure to interest and amuse those fortunate enough to be present.

All homœopathic physicians, whether members of the Society or not, are cordially invited to attend this meeting.

Additional details will be published next month.

Willis B. Gifford M.D., President.

American Hospital Association.

The 14th annual meeting of the American Hospital Association is to be held in the Hotel Ponchartrain, Detroit, Michigan, on September 24, 25, 26 and 27. An extremely interesting program has been prepared, dealing with the problems and successful conduct of hospitals, from operating rooms to laundries, social service, feeding of patients and employees, grading of nurses, out-patient work, etc. Some of the best known hospital superintendents in the country are down for addresses. For information apply to J. N. E. Brown, M. B., Secretary, 90 Charles St., East, Toronto, Canada.

Southern Homœopathic Medical Association.

The Southern Homœopathic Medical Association will meet in Richmond, Virginia, on October 15, 16 and 17. Dr. Wellford B. Lorraine and his committee have charge of local arrangements. Headquarters at the Jefferson Hotel, Richmond. Social Rates are to be given to members, and all are asked to work with a determination to make this the best meeting of the Association ever held.

LEE NORMAN, M.D., Secretary.

AMERICAN ASSOCIATION OF CLINICAL RESEARCH.

The fourth annual meeting of the American Association of Clinical Research will be held in New York City, at the Academy of Medicine, on November 9.

The sessions will be held from 9 A.M. to 1 P.M., from 3 P.M. to 6 P.M., and from 8 P.M. to 10 P.M. The evening session will be open to the public.

Notable contributions on the Negri Bodies, on certain Fluids for Tubercle Bacilli in the Urine, on Adjustment and Function, on Psychoanalysis and Traumbedeutung, on a Pandemic of Malignant Encapsulated Throat Coccus on The Single Remedy, on Indicanuria and Glycosuria, on Disease Conditions expressive of Correct Diagnosis, on Biochemic Problems, on The Two Most Far-Reaching Discoveries in Medicine, and others are to be given. Every member of the Association is cordially invited to contribute a paper.

FOOTBALL ACCIDENTS.

The November number of American Medicine presented the following as its leading editorial. While at first sight it may seem to be somewhat sarcastic, when one thinks the subject over more carefully, he will find a greater amount of truth than may first appear.

"Football fatalities are still with us in spite of the new rules which have greatly reduced the number of serious injuries. Indeed as compared with 1908 the season of 1910 showed a slight increase of deaths. It seems as though the new rules really do prevent much serious injury—the players now merely killing each other. The Marquis of Queensbury rules are far superior in that every advantage is given the contestants so that they can defend themselves, but the football player is generally injured when he is in a defenselss position, even when he is down. Sometimes he is struck from behind and as a rule one man is attacked by several. We therefore suggest that prize-ring rules be introduced next season in the interests of fair play and human life, as there seems to be no earthly prospect of the abolition of the game. Fourteen fine men have been slaughtered to make a holiday, and our women are just as keen for it as the Roman ladies were for the death of gladiators. Spanish ladies shrink with horror at the mention of our brutality, but have none of our maudlin sentimentality over the sight of a blinded horse disemboweled by an enraged bull, There is something rotten in our Denmark—not theirs."

PERSONAL ITEMS

The newly organized Boston University Women Graduates Club has elected the following alumni of B. U. School of Medicine to its first list of executive officers:

Vice President, Dr. Clara E. Gary, '85.
Auditor, Dr. Barbara Taylor Ring, '99.
Director, Dr. Eliza Taylor Ransom, '00.

Dr. Emilie Young O'Brien, '93, was a member of the first Nominating Committee, and Dr. Edith C. Varney ,'93, was elected a member of the Nominating Committee for 1913.

Dr. John P. Jones, B. U. S. M. 1901, has removed from 391 to 392

Broadway, South Boston, where he will continue to make a specialty of electric and X-ray treatment.

Dr. Maude G. Furniss, B. U. S. M. '97, has moved from 12 Arlington Street to the Charlesgate, 535 Beacon Street, Boston.

Dr. Katherine E. McCarty, 1911 B. U. S. M., has finished a year's interneship at the Massachusetts Homœopathic Hospital and has opened an office at 9 Masonic Temple, Dover, New Hampshire.

Dr. Katharine French, B. U. S. M. 1910, has completed her service at the Massachusetts Homœopathic Hospital Contagious Department, Brighton, and has opened an offiice at 469 Broadway, Cambridge, Mass.

Dr. Thomas Clegg, of Philadelphia, died on June 26 last.

Dr. Emerson F. Hird, B. U. S. M. 1910, now located in Concord, N. H., sailed from New York on July 18 for Germany, for a brief stay.

Dr. Alice S. Woodman is spending the summer at Sunset Camp, Racquette Lake, in the Adirondacks.

Dr. Alonzo G. Howard of Boston is spending the month of August in Nova Scotia.

CURABILITY OF PSORIASIS.

"The question is asked about the ultimate results: 'Is psoriasis curable with a perfectly carried out vegetarian diet, and proper other treatment?' This is a difficult question to answer very positively, because of the well-known character of the disease and the uncertainty of patients, as to their again consulting the same physician if there should be a relapse. But from my watching this treatment for more than twenty years, and from my more special study of the subject the last two years, I believe that a very considerable proportion of patients can be cured and remain well under a strict diet.

"Finally it may be said without equivocation that the results of this plan of treatment, as watched by my several associates in years past and myself, and by physicians in consultation, and by very many most intelligent patients in private practice, far exceed anything which had been previously secured by the best of treatment at the hands often of the best men in the profession." — Bulkley in the Journal of the American Medical Association.

Some Medical Proverbs.—In a recently published advertising medical almanac are several items that seem more than usually humorous. In a series of aphorisms and modified proverbs are the following:

"The patient must trust his doctor, but it is a poor rule that works both ways."

"It is significant that doctor and debtor have the same abbreviation—'Dr.'"

"No man is a hero to his valet, and no woman an angel to her physician."

"It's an ill wind that blows the doctor much good."

—The Boston Medical and Surgical Journal.

George S. Adams

CAT.

Series I 1912

Westborough State Hospital Papers

A Testimonial to

GEORGE SMITH ADAMS, M. D.

Edited by

SOLOMON C. FULLER, M. D.

BOSTON
THE ARAKELYAN PRESS
368 Congress Street

TO

GEORGE SMITH ADAMS, M.D.

LATE SUPERINTENDENT OF WESTBOROUGH STATE HOSPITAL

AND SOMETIME LECTURER ON CLINICAL PSYCHIATRY

AT BOSTON UNIVERSITY SCHOOL OF MEDICINE

THESE PAPERS ARE DEDICATED BY HIS FORMER ASSISTANTS

AND PUPILS AS A TOKEN OF THEIR REGARD AND IN

HONOR OF TWENTY-FIVE YEARS' SERVICE

ON THE MEDICAL STAFF

WESTBOROUGH STATE HOSPITAL.

CONTENTS

PAGE

I. GEORGE SMITH ADAMS 467

II. THE PSYCHOPATHIC DIVISION WESTBOROUGH STATE HOSPITAL. BY HENRY I. KLOPP, M.D., ALLENTOWN, PA., *Superintendent, Allentown State Hospital; Formerly Assistant Superintendent and Physician in Charge of Psychopathic Division, Westborough State Hospital* 471

III. A STUDY OF THE MILIARY PLAQUES FOUND IN BRAINS OF THE AGED. BY SOLOMON C. FULLER, M.D., *Pathologist, Westborough State Hospital and Instructor in Normal and Pathological Anatomy of the Central Nervous System, Department of Neurology, Boston University School of Medicine.* (Plates I-XVI.) 479

IV. RECOVERIES IN DEMENTIA PRÆCOX. BY WILLIAM W. COLES, M.D., KEENE, N. H., *Formerly Senior Assistant Physician, Westborough State Hospital* 537

V. THE SELECTION OF STIMULUS WORDS FOR EXPERIMENTS IN CHANCE WORD REACTION. BY ELEANOR A. McC. GAMBLE, PH.D., *Professor of Psychology, Wellesley College,* AND ALBERTA S. GUIBORD, M.D., *Physician, Neurological Department, Evans Memorial for Clinical Research; Formerly Senior Assistant Physician, Westborough State Hospital* 551

VI. TWO CASES OF MULTIPLE SCLEROSIS WITH OBSCURE NEUROLOGICAL AND MENTAL SYMPTOMS (FORMES FRUSTES). BY SOLOMON C. FULLER, M.D., HENRY I. KLOPP, M.D., AND MICHAEL M. JORDAN, M.D., *Assistant Superintendent, Westborough State Hospital.* (Plates XVII-XXVI.) 571

VII. SLEEP AND SOMNAMBULISM. *(Authorized Translation from the French of* PROF. M. BERNHEIM, *Nancy, France.)* BY WILLIAM W. COLES, M.D. 589

VIII. PURULENT STREPTOCOCCIC CEREBRO-SPINAL MENINGITIS FROM MIDDLE EAR DISEASE: THE REPORT OF A CASE. BY RUTH B. COLES, M.D., KEENE, N. H., *Formerly Senior Assistant Physician, Westborough State Hospital,* AND SOLOMON C. FULLER, M.D. (Plates XXVII-XXIX.) 597

CONTENTS

PAGE

IX. BRAIN WEIGHTS IN PSYCHOSES. BY STELLA B. SHUTE, A.B., *Assistant in Histology, Westborough State Hospital*.......... 605

X. A REPORT ON THE THERAPEUTIC USE OF BACTERIAL VACCINES AND ON ANTI-TYPHOID VACCINATION AT WESTBOROUGH STATE HOSPITAL. BY CLARENCE C. BURLINGAME, M.D., FERGUS FALLS, MINN., *Assistant Superintendent, Fergus Falls State Hospital; Formerly Senior Assistant Physician, Westborough State Hospital.* 611

XI. A CASE OF MULTIPLE PAPILLOMA OF THE BRAIN (ADENO CARCINOMA). BY SOLOMON C. FULLER, M.D. (Plates XXX-XXXII.) 621

XII. A CASE OF MONGOLIAN IDIOCY. BY WALTER A. JILLSON, M.D., *Senior Assistant Physician, Westborough State Hospital.* (Plates XXXIII-XXXIV.) 631

XIII. ALZHEIMER'S DISEASE (SENIUM PRÆCOX): THE REPORT OF A CASE AND REVIEW OF PUBLISHED CASES. BY SOLOMON C. FULLER, M.D. (Plates XXXV-XXXVIII.).................. 635

XIV. FURTHER OBSERVATIONS ON ALZHEIMER'S DISEASE. BY SOLOMON C. FULLER, M.D., AND HENRY I. KLOPP, M.D. (Plates XXXIX-XLI.) 669

XV. A CASE OF HUNTINGDON'S CHOREA WITH LATE ONSET. BY SOLOMON C. FULLER, M.D., AND JOHN F. LOVELL, M.D., *Senior Assistant Physician, Westborough State Hospital.* (Plates XLII-XLV.) 679

I

GEORGE SMITH ADAMS.

The former assistants of Dr. George Smith Adams, for twenty years superintendent and for more than a quarter century continuously on the medical staff of Westborough State Hospital, have united in the series of papers here collected to commemorate his long and worthy service. As medical students at Boston University, where during the past twenty years he has given clinical demonstrations in mental diseases, the majority of the contributors to this volume received their first instruction in clinical psychiatry from Dr. Adams. Later, a larger majority of us, as his assistants at Westborough and through the daily staff conference over which he presided, obtained our first real appreciation of some of the greater problems of psychiatry. And all of us, in every effort for better treatment and extension of our knowledge of the cases at Westborough in whose care we assisted, unfailingly received his heartiest support and encouragement. To each the great inspiring feature of the man has been that, despite the multifarious executive details of the superintendency, Dr. Adams remained the physician—no phase of psychiatry, alone or in its relation to general medicine, was without appeal to him. This broad interest engendered in the staff an enthusiasm for the special work we were called upon to perform, and whatever of success may have been ours is due in large measure to his teachings and the inspiration of his example.

The contributors, therefore, on the occasion of Dr. Adams' retirement from the superintendency of Westborough State Hospital, offer these papers as a mark of their appreciation of the man and physician, and also in recognition of his ability as an hospital administrator. We believe that he fits well in the class of which Ex-president Work of the American Medico-Psychological Association writes, "In the physical care of the congregated sick . . . masters in medicine."

The estimate placed on Dr. Adams' work by the trustees of Westborough State Hospital is shown in the following quotation from the annual report for the year ending Nov. 30, 1911: "It has been the policy of the trustees to develop this institution just as far as practical along hospital rather than asylum lines. Classification of patients has been made and the most modern methods of treatment introduced in the effort to cure the largest number of cases where such an outcome seemed at all possible.

"The trustees feel that their efforts in this direction have met with a very appreciable measure of success, but at the same time

they recognize fully that whatever creditable results have been obtained are due very largely to the indefatigable work, personal interest and skill of the superintendent during most of the life of the hospital. . . . . The trustees feel that it is but just and right at this time to acknowledge publicly their recognition and grateful appreciation of the many years of loyalty and devotion on the part of Dr. Adams."

And again, upon the resignation of Dr. Adams the following appreciation was spread upon their records and a copy sent to him:

"In accepting the resignation of Dr. George S. Adams as Superintendent of Westborough State Hospital, its trustees would express their appreciation of his long and constant devotion to its interests.

"During the twenty-five years of this service, the work and responsibility have increased two-fold, to be met and borne by strength and ability equal to the demand.

"The general harmony of the hospital-administration in the past years is recognized as due to the relations, official and personal, which have been established and maintained under sympathetic leadership. Among the institutions of this Commonwealth this hospital may justly claim high place, and it is gratefully recorded that to him who has come with it all the way hither, is the satisfaction and the reward."

George Smith Adams was born of Scottish parentage at Norwich, Conn., February 7th, 1848. When he was three years of age his parents moved to Massachusetts, where the greater part of his life has been spent.

At the outbreak of the Civil War, our subject was a boy of fourteen. His father and an elder brother enlisting in the Union Army made it necessary for him to leave the public school to aid in the support of the family left behind. From this time on, his formal education in the schools ceased until he was twenty-five, when he began the study of medicine. After leaving the public school, he learned the trade of machinist, attending meanwhile the night school of that period. Notwithstanding this handicap in his preparatory training, he obtained a good and serviceable education which all in all proved a good foundation for the study of medicine, for his studies had been well directed. His general reading had brought an acquaintance with much of the best in English literature; he possessed a practical understanding of applied physics and a good knowledge of the principles of biology. Later in life his interest in these things did not wane, particularly in those sciences closely allied to medicine. This is well evidenced in his wide knowledge of botany and in his good grasp of present-day general biological problems.

At the age of twenty-five George Smith Adams entered Hahnemann Medical College, Philadelphia, Pa., graduating in 1876, first in a class of fifty-four, winner of the Centennial gold medal for general excellence throughout the course, previously winner of a bronze and silver medal for good work. After graduation Dr. Adams practiced in Philadelphia for a year. The following year was spent at Wilmington, North Carolina. He then went to Maynard, Massachusetts, his boyhood town, where he was a general practitioner from 1878 to 1881. Moving to Worcester, Massachusetts, he practiced there for the next five years, and it was there he received his appointment as first assistant physician to Dr. N. Emmons Paine, first superintendent of Westborough State Hospital.

Dr. Adams' service at Westborough State Hospital began December 13th, 1886, coincident with the opening of the Hospital for the reception of patients, and continued to May 21st, 1912. Upon the resignation of Dr. Paine, in 1891, Dr. Adams was promoted to the superintendency, a position which for over twenty years he administered with great ability. The policy instituted at the very opening of the Hospital, namely, a strictly hospital attitude towards patients, rather than asylum with inmates who were to be prevented from doing injury to themselves or others—merely a custodial institution—was rigidly followed throughout his administration. He passed on to his successor an institution for the care and treatment of the insane where the "hospital idea" was not simply a hoary tradition brought out and furbished for special occasions, but an ideal which for twenty-five years had been constantly held before its officers and minor employees as something toward which every effort must be bent.

The present organization of Westborough State Hospital owes much to Dr. Adams. There are many features which might be singled out for mention, but we limit comment to the most important of his larger policies. First and foremost of the achievements of the Hospital is the Psychopathic Division, the evolution of which is described in one of the contributions to this volume. For several years, Dr. Adams had warmly advocated the segregation of the acute hopeful cases from the chronic and dementing cases. The first fruit of this campaign was the Talbot building around which has been developed a group of buildings, their main object to provide proper facilities to hasten as quickly, as is consistent with safety, the restoration to mental and physical health of those cases that will get well. The group makes no pretense at being a psychiatric clinic, but it is a place where therapeutic measures are cultivated assiduously. Out of the success of these special hospital buildings have grown two other groups, of the nature of colonies, for the quiet, able-bodied, harmless insane. It should be borne in mind that the

beginning of these attempts at segregation, at least for the first mentioned group, goes back some fifteen years, so that, when the broad policy of the State Board of Insanity was instituted with reference to hospital, asylum and colony groups of patients, Westborough State Hospital was in position to seize the opportunity to demonstrate that these classes, even though on a small scale, could be cared for efficiently in a single institution.

Of Dr. Adams' medical interest we have already spoken, but we would mention what has always seemed to us most remarkable, his intimate knowledge of the hospital details, of patients and their symptoms, even after years, and his emphasis on the personal note in the relation of patient and physician—a patient to him was something more than a case. He knew practically every patient by name and kept in close touch with the progress of their condition.

It is hoped that freedom from the annoyances of administrative details will bring the opportunity for elaboration of his views on the treatment of the insane; and that his rich experiences will find some permanent record for the benefit of his co-workers in this important field of medicine.

S. C. FULLER.

Westborough State Hospital,
Agust 10th, 1912.

II

THE PSYCHOPATHIC DIVISION. WESTBOROUGH STATE HOSPITAL.

By Henry I. Klopp, M.D.

The evolution of State supervision and hospital treatment of the insane may, as has been aptly said, be divided into three periods:

I. The chain and dungeon era.
II. Asylum era.
III. Era of hospitals—psychopathic divisions for acute cases, colonies for the chronic.

Definite dates for their separation cannot be fixed in the nature of the case, but the last period commences at a comparatively recent date. It has seen a marked advance not only in mere matters of housing and the temporal welfare of these unfortunates but also in the methods employed in their treatment, as well as in our knowledge of the medical and social problems involved. The modern insane hospital is more than a custodial institution; it is a hospital in every sense of the word where each patient receives special consideration and where every effort is made to return him to society either as a normal individual, or as capable of adapting himself in a fair degree to his surroundings. Failing this he is to be made as useful as possible within the institution.

From the standpoint of the hospital grouping, the insane in the public institutions of Massachusetts are classified in three main divisions: (1) the acute and curable, for which a strictly hospital care is advocated, (2) the chronic insane who require strict supervision and confinement for the protection of themselves and the public—the asylum class—and (3) the chronic but able bodied, harmless insane, who are either competent or may be taught to do some useful work to aid in their support, allowed a larger liberty and placed under surroundings more homelike than would be advisable for the first two classes—the colony group.

According to the present idea this grouping can be made to economic advantage in a single institution under one administrative head, and the Westborough State Hospital offers an example of such management.

This paper will deal with the acute and curable insane, the first of the classes just mentioned. Their treatment requires first and foremost a special organization, one in many respects similar to that of a well organized general hospital; its medical officers enthusiastic and efficient, its nursing corp intelligent and adequate in

number. Improved therapeutic apparatus and accommodations for proper grouping of the cases must be liberally provided, for the therapeutic requirements are quite often like those for acute somatic diseases. Indeed, anyone who is familiar with work among the insane will not be astonished at the statement that the treatment of the ordinary ills to which flesh is heir forms no small part of the staff's daily routine. In addition to these general hospital features must come, of course, the special facilities which mental disease of this character require. Here it may be said in passing the costly and elaborate are not always the most efficacious in the treatment of the insane. But it must not be understood that a measure if beneficial should be ruled out solely on the ground of cost, nor that wards and buildings to be useful must perforce be ugly and shoddy.

At Westborough, the Talbot building, opened in 1898, formed the nucleus of the psychopathic department. It is a two-story building accommodating sixty patients, equally divided between the two sexes. The wings for the two sexes are separated by a group of rooms and suites for physicians and minor officials, rooms for electrical treatment, and examining rooms which occupy the central portion of the building. On the upper floor of each side are three single rooms for patients, a dormitory of twenty beds, a dining-room and serving-room, bath and spray room, linen rooms and clothes rooms. On the first floor are a large living room, sewing room, bath, spray and examining offices, two single rooms, one double room and a dormitory of four beds. The need for such a building was conceived and urged by Dr. George S. Adams in 1896, the original purpose being the isolation of quiet and seemingly hopeful cases. Its success was immediate. Patients from the old hospital group who were sent to Talbot looked upon this transfer as the preliminary step toward home. Indeed, not only to patients did Talbot mean much, for it also brought a new spirit into the whole medical life of the hospital, a spirit that only those who were there before and after the movement began can ever fully appreciate.

It had been long the common experience of psychiatrists that disturbed states of the insane were not necessarily of bad prognostic import; that many patients who enter the hospital greatly excited, depressed or confused were oftentimes the very cases from which the most in the way of restoration to mental health was to be expected. In fact it was not long after the opening of Talbot that a large number of the patients treated there had come from this originally very disturbed class. Furthermore, the building afforded opportunity for the treatment of the cases

coming voluntarily to the Hospital who would naturally have hesitated to place themselves of their own free will in surroundings which have long been an object of horror to the public. Many of these were borderline cases, or those suffering from psychasthenia or neurasthenia, on whom the effect of the old environment would be but the opposite of favorable.

But it became immediately apparent that the acute hopeful cases needed isolation even more during their markedly excited or depressed periods, and in 1903 certain wards in the asylum group were set aside for this purpose, affording accommodations for the acutely excited or depressed, those suffering from the confusional states of psychoses of recent onset, the acute alcoholic insanities and drug habitues which were most likely to be benefited.

The inadequate facilities of these wards and the general overcrowding in this part of the Hospital made it impossible, under such arrangements, to care for these patients to the best advantage. It was plain that suitable buildings must be constructed. In 1905, accordingly, the Codman building, with a capacity for forty-four women was opened, and continued to be used for women until 1910, when the Childs building with a sixty-bed capacity was ready for the reception of patients. The women were then transferred to this new building, certain improvements made in Codman which experience had suggested, and the building turned over to men of the same class as of the women who had been moved.

Codman is a building of two stories. On each floor there are three dormitories, two of which have a capacity of seven beds each, the other of three beds, five single rooms for patients, one serving-room for food, an examining room and an adequate linen room. On the second floor there is a room for the continuous bath provided with four tubs, a spray bath and toilet facilities, on the first floor three tubs for the continuous bath and also a spray and apparatus for electrical treatments. Leading from each floor is a spacious, covered veranda, measuring thirty by thirty feet, where beds and reclining couches may be placed. The verandas are screened.

The Childs building is also a two-story structure, and is a slight modification of Codman. There is an annex extending from the central portion of the rear of the buildng, on the second floor of which are rooms for hydrotherapy, a room for the continuous bath with fiive tubs and a room containing apparatus for various sprays and douches, a single room and two three-bedded dormitories for very disturbed patients and a room for electrical treatments equipped with high frequency and X-Ray apparatus, gal-

vanic and faradic cabinets with sinuosidal attachments, a leucodescent lamp, and a reclining electric light cabinet. On the first floor of the annex there is a bath room with three tubs for the continuous baths, and a spray, two single rooms, three dormitories of three beds each and a room for electrical treatments. On each floor of the main part of this building there are two seven bedded dormitories, six single rooms, an examining room, a nurses' record room, a serving room, a dining room for nurses, a day room for patients, linen room and toilet facilities. From the southerly end of the main building, as with Codman, there are two covered verandas, thirty by thirty feet, the upper one screened. On the upper veranda are twenty beds and a few steamer chairs. Here patients who are not noisy and do not show too great unrest are cared for day and night, while the first floor veranda is provided with an equal number of reclining couches and steamer chairs which are used chiefly for outdoor airing during the day.

The upper floors of these two buildings Codman and Childs, serve as the receiving wards for the disturbed cases of this group, and such other disturbed cases admitted to the hospital, concerning which there is any doubt as to whether or not they may be considered as hopeful, are also received and kept here until all reasonable doubt as to non-suitability has been dispelled. The patients on the upper floors are essentially bed patients. As a matter of fact a preliminary treatment of rest in bed is considered of such importance that all admissions whether to these two buildings or to Talbot are given rest-in-bed periods of varying length. Moreover, the patient is more carefully and regularly observed in bed than otherwise, food is better taken and acute mental symptoms abate more quickly. On these upper floors the patients remain during the stormy and distressing period of their psychosis.

For certain maniacal conditions, as well as for certain states of restlessness, agitation and depression, the so-called neutral bath which has been used here extensively during the past ten years, has proven a most satisfactory sedative in allaying excitement and in controlling depression. These baths are prolonged from two to three hours to one to two days, and in extreme cases, two to three weeks, the patients always under the constant supervision of a nurse. The optimum temperature for these baths is 96 F., the lowest range should not go below 92 F., nor the highest above 97 F., mid-summer optimum 94 F. Of course, during baths of any length the patient takes his meals as well as sleeps in the tub. Warm packs are also extensively employed, especially in cases with excitement and marked psycho-motor unrest, where it is not only difficult to secure the full benefit of the continuous bath but

also where, for various reasons, such a procedure would be unwise. These packs are always changed after three hours, and after their removal, in order to bring about a proper reaction, a cold sponge or spray is given. Various shower baths and douches are employed where conditions seem to indicate, usually in graduated temperature and force, for their tonic effect. Electric light baths have seemed of benefit in promoting elimination.

The feeding of patients is considered of the greatest importance, for many of them on admission show every evidence of malnutrition, which is sometimes the result of defective metabolism or poor assimilation and sometimes the result of starvation from refusal of food, induced by hallucinations and delusions. Moreover, almost all cases, whether poorly nourished or not, exhibit considerable anorexia. So, unless definitely contraindicated, these patients are not only given and urged to take the usual three meals, but lunches consisting of broth, milk, egg-noggs and other nutritious liquids are given between meals. The position is taken in this matter, and it is abundantly borne out in experience, that there can be little or no mental improvement without a good physical constitution upon which to work.

Next in importance to rest, feeding and hydrotherapy, is the open-air treatment, and to this end the verandas of Codman and Childs and the lawn and shade of trees in the front of Talbot are employed. The seasons of the year make no difference. It is felt that the open air promotes sleep, appetite and assimilation, all of which are to be desired, and no one can deny the benefit which comes from better oxygenation. At any rate, when the treatment of these cases is supplemented by the bracing out-of-door atmosphere, improvement is certainly more rapid than in those cases in which for various reasons one cannot resort to this treatment.

When improvement begins—allaying of excitement, abatement of depression, lessened intensity and frequency of hallucinations and delusions, or their disappearance, and improvement in general physical condition, the patient is transferred to the intermediary wards or rooms on the lower floors of Codman and Childs. If the patient continues to improve consistently, he is then transferred to Talbot, where practically all of the convalescent patients have the freedom of the grounds unattended, and not infrequently two or more congenial patients are permitted short trips away from the Hospital, to neighboring villages for outings, or to do a little shopping.

In January, 1908, a small cottage located but a short distance from the group of buildings already described became available

and shortly after was furnished to accommodate eight women, who live there under surroundings nearly like those of home, as there is no nurse in charge of the cottage. These patients take their meals in the Talbot Building. Their ability to hold all they have gained and to improve further is by no means an unimportant consideration in deciding upon their complete recovery. With the beginning of improvement the patients are encouraged to take an interest in their surroundings. Frequently this interest is evinced voluntarily by little assistance rendered the nurse, or some little kindly office to a fellow patient. With continued mental and physical improvement, and always with the interest of the individual patient in mind, regular employment is permitted and encouraged. The men are permitted, for short periods daily, to work in the various departments of the hospital,—greenhouses, work on lawns, folding and sorting rooms of laundry, etc. The women assist the nurses in making beds, or in the dining room, work with raffia, embroidery, knitting, plain sewing and the like. Indoor games, such as cards, checkers, billiards and the like are encouraged. Such as are suitable attend the hospital weekly dance. The women patients maintain a little club, "The Optimist Club", to which they elect their own members. This club gives little entertainments for the patients of this group in the way of concerts, lectures on topics of interest by outsiders, etc. This is encouraged because found helpful.

In this progression from one set of wards to another, and from one building to another, the patient himself more readily appreciates the progress in his case and more willingly cooperates with the physician and nurses in the measures taken in his behalf. There is also the added encouragement in seeing patients who like himself are making progress and he is freed from the depressing influences of the presence of chronic dements, paralytics and the like.

While the measures resorted to in the treatment of cases in the psychopathic division have been outlined in a general way in what has gone before, it goes without saying no hard and fast line can be followed in every case. The individual must always be studied and his peculiar needs met as best as we are able. Even with drugs these must be prescribed as indicated, even for cases suffering a like psychosis. When these and other methods fail, psychotherapy may be helpful and has often so proven. The cases, therefore, are studied not only from the standpoint as to where they best fit in the general management of the group but also from a strictly psychiatric point of view, and upon this latter the maximum stress that we are able to bring is placed.

It has not been proven at Westborough that the isolation of the hopeful cases and placing them under the sole care of one physician and his assistant has dulled the psychiatric interest of the physicians who have the care of the more chronic cases. On the contrary it is believed to be a stimulus to better work. Indeed it occasionally happens that patients sent to the services for chronics, who after a time show conditions which clearly indicate that they should receive the benefits of the psychopathic division are more readily spotted, and a certain alertness in accurate observation is engendered. Moreover, these cases of the psychopathic division are always accessible to other members of the staff, and indeed, weekly, the physician in charge is accompanied on his usual rounds by a number of the staff members who become acquainted with the progress that is being made in the various mental conditions. The histories, too, of these cases are always presented at the staff conference for discussion and diagnosis, and not infrequently the patients themselves.

Moreover, these cases of the psychopathic division are always accessible to other members of the staff, and indeed, weekly, the physician in charge is accompanied on his usual rounds by a number of the staff members, who, thus become acquainted with the progress that is being made in the various mental conditions. The histories, too, of these cases are always presented at the staff conference for discussion and diagnosis, and not infrequently the patients themselves.

Three years ago I made a study of the admission to the psychopathic division covering a period of five years, March 1, 1903, to March 1, 1909. During that five-year period, the yearly admissions to this department of the hospital increased 75 per cent, due in part to our enlarged facilities, in part to a knowledge of the fact that there was such a department at Westborough State Hospital and patients or their friends expressing a desire that they be committed there.

The percentage of this group, the recoverable and those to whom we had given the benefit of doubt, was to the total admissions during this period 46.31 per cent. Among these were practically all of the manic depressive cases, involution melancholia, hysteria, exhaustion-infection psychoses, many of the so-called toxic psychoses and cases of hysteria, and all of the first admission with recent onset of dementia præcox. We single out from these cases for special comment here the manic depressive and dementia præcox groups, the former with a recovery rate of 70.65 per cent, the latter 20.83 per cent for all forms. It might be argued that the manic depressive cases would get well without the advantages of a psychopathic division, and that the cases called

dementia præcox from the fact of their recoveries were faultily diagnosed. Infallibility in diagnosis is not claimed. And yet Kraepelin, E. Meyer, K. Kohlbaum, Albrecht, Raecke and Schmid during 1903 to 1911, inclusive, have reported, on the basis of katamneses, recoveries varying all the way from 30 per cent. to 2 per cent. It is important to be able to determine what cases of dementia præcox will get well and to what group belong those cases which clinically simulate dementia præcox and yet will get well, but we pass this by since a study of the recovered cases of dementia præcox cases, by Dr. Coles, is published elsewhere in this volume. The writer would call attention, however, to a fact of significance in the service of this department, and that is, that during the five-year period referred to above, the average hospital residence of the patients of this group was reduced from 6.76 to 3.47 months, and continues approximately the same. Without appearing with a brief, this fact alone, if there were not other features to recommend, is sufficient to justify the establishment of similar divisions in the majority of hospitals for the insane.

III

A STUDY OF THE MILIARY PLAQUES FOUND IN BRAINS OF THE AGED.*

(PLATES I-XVI.)

By SOLOMON C. FULLER, M. D.

CONTENTS.

I. Introduction.
II. Origin and nature of miliary plaques.
  Historical:
  Origin from degenerating ganglion cells.
  Glial encapsulation of amyloid and other bodies.
  Deposited products of pathological metabolism.
  Glia rosettes.
  Necrotic foci with proliferation of axis cylinders.
  Bacterial nature.
  Sphirotrichia multiplex cerebri.
  Circumscribed necroses of glial and nervous elements.
  An index of senile involution.
III. Material employed and scope of present study.
IV. Analysis of gross findings with reference to plaques.
  Atrophic brains.
  Normal-weight brains.
  Gross lesions resulting from arteriosclerosis.
V. The plaque cases among elderly subjects dying insane.
  Clinical abstracts.
  Analysis of clinical histories with reference to classification.
  Age incidence.
VI. The cases without plaques among elderly subjects dying insane.
  Clinical abstracts.
  Analysis of clinical histories with reference to classification.
  Age incidence.
VII. Material from elderly subjects dying without psychosis.
VIII. Results of examination of material from fifty younger subjects dying of various mental diseases.
IX. The plaques.
  Methods employed for display of plaques.
  Their microscopic appearance.
  Topographic and stratigraphic distribution.
  Relation to glia and vascular apparatus and to nervous elements.
  Association with Alzheimer's intracellular degeneration of neurofibrils.
X. Senile dementia.
  General considerations of the histology of normal and pathological cerebral involution.
  Cerebral histology of the plaque cases.
  Comparison of general histological changes in non-plaque cases among elderly subjects dying with and without psychosis.
XI. Summary and conclusions.

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I. Introduction

Although miliary sclerosis of senile brains was reported by Redlich more than twelve years ago, and Blocq and Marinesco even six years prior had called attention to a like condition in two aged subjects, one of which was an epileptic, the literature of the structures discussed in this paper is not extensive. Within the last three years, however, so-called plaques, now recognized as identical with the miliary sclerosis of Redlich and common though not constant findings in the brains of persons dying at an advanced age, have been studied intensively and with illuminating results. While many interesting details concerning miliary plaques of the brain have been established, the last word, perhaps, has not been said. As to the origin and nature of these miliary plaques, opinions differ, some even taking on the character of polemics.

Psychoses occurring in the period of senium have received less attention from the clinicians and anatomists than some other psychoses with equally unfavorable prognosis, as an example, general paresis, and are consequently less understood. Comparatively little study has been devoted to senile cases largely for the reason of a commonly expected fatal outcome in a mental disease affecting persons already near the end of the allotted span of life. It has been the object of this paper to add to already existing clinical and anatomical data, data of such character which when sufficiently accumulated and properly correlated may serve to explain many obscure clinical states and aid in establishing a more definite histopathology for the types of involution psychoses. To this end material from thirty-three elderly subjects dying insane has been employed for study. By way of comparison brain tissue from six elderly persons dying without psychosis and sections from the brain and spinal cord obtained from fifty younger subjects dying of various mental diseases have been added. The material from elderly persons dying without psychosis was kindly furnished by Dr. F. B. Mallory from the autopsies of Boston City Hospital for the years 1909 and 1910. The remaining subjects came to autopsy at Westborough State Hospital; the thirty-three elderly persons, with the exception of two cases in which plaques were demonstrated in sections prepared five years ago, died during 1909-1910 and the first three months of 1911, while the fifty younger subjects are from autopsies of the past six years.

II. Nature and Origin of Plaques.

The special contributions, as well as incidental notes on miliary plaques, to be found in the literature of the histopathology

of the brain, have been reviewed recently by Perusini[1] and also by Huebner[2]. More recently, and since the completion of the examinations here reported, the paper by Barrett[3] concerning degeneration of intracellular neurofiibrils associated with miliary gliosis, the monograph by Simchowicz[4] on the histopathology of senile dementia and Alzheimer's[5] report of a new case of senium præcox have appeared. In these three last-mentioned papers, plaque literature is cited in full. The references which follow, therefore, will not be inclusive, but will be confined to the principal contributions and the views set forth to explain the origin, nature and clinical significance of the plaques—those peculiar miliary areas frequently found in the brains of persons dying at an advanced age and with which psychosis may or may not have been associated.

Historical—The observations of Redlich[6] (1898) with regard to miliary plaques of the brain concerned two cases of senile cerebral atrophy—general and focal atrophies—associated clinically with memory defect, mental confusion, amnesic aphasia and asymbolic apraxia. Similar findings, however, in the brain of an aged epileptic and the case of an elderly subject who had shown clinically dementia, aphasia, asymboly and epileptiform attacks, were reported earlier by Blocq and Marinesco[7] (1892). Redlich described the miliary plaques as consisting of numerous fine glia fibres and moderately large glia cells exhibiting a slight alteration in shape and some pigmentation, many of the plaques presenting regressive changes. The regressive changes were shown in a loss of sharpness in the contour of the proliferated fibres and, occasionally, in a homogeneous or granular appearance of the entire plaque. These miliary areas, generally circular in outline and varying in diameter from that of a ganglion cell to a diameter four to six times as great as such a cell, were interpreted as the result of focal compensatory glia proliferation supervening the destruction of ganglion cells. The reason which Redlich gave for this view was the preponderance of plaques in cortical laminæ where, *pari passu*, ganglion cells were the most degenerated. In Redlich's cases, the layers of small and medium-size pyramidal cells offered the maximum of ganglion cell degeneration and plaque formation. It was admitted, however, that the proliferative changes comprised in each of the miliary foci were in excess of the reactive gliosis which usually follows the destruction of a ganglion cell. As to the origin of plaques, Cramer[8], in his discussion of the pathological anatomy of the psychoses (1904), comes to a conclusion similar to Redlich's.

Miliary plaques in the brains of senile dements were also described by Alzheimer[9] (1904). In this early observation, the

plaques to which Alzheimer called attention were composed of a felt-work of fine glia fibres surrounding corpora amylacea, or other bodies the nature of which was not clear, and were considered as identical with the *miliare Sklerose* of Redlich. Later (1906), at a meeting of the *südwest deutscher Irrenärtze*, Alzheimer[10] made a preliminary report of a case in which he had found rather peculiar, and hitherto undescribed, alterations of the intracellular neurofibrils of cerebral ganglion cells. Associated with the peculiar neurofibril changes were miliary plaques of the cerebral cortex. In explanation of the plaques, the position was taken that their presence was due to deposition in the brain tissue of chemical substances resulting from pathological metabolism of nervous elements. Various chemical substances, which he designated collectively as *Abbau Produkte,* split products of pathological metabolism could be demonstrated in the plaques by staining sections with certain dyes after the employment of suitable fixatives.

About the same time (1906), Mijake[11] reported finding plaques in the brains of two senile dements. The glial nature of the plaques was emphasized, for they were described as *glia Rosette.*

Léri[12] in his treatise on the senile brain (1906), devotes a chapter to the particular structures under discussion, there designated as *sclerose nevroglique miliare.* Two illustrations are given of the appearance of the plaques in the cerebral cortex of a person dying at the age of fifty-eight, having previously suffered epilepsy, a rather pronounced dementia and marked aphasic disturbances. Léri explained the epileptic attacks in this case as resulting from the irritation produced by the sclerotic miliary plaques.

Herxheimer and Gierlich[13] in their neurofibril studies (1907) reproduce, photographically, the plaques demonstrated in a section prepared after the silver impregnation method of Bielschowsky. These observers look upon the plaques not only as characteristic of the senile cortex, but also as resulting from greatly altered cells—swellings and subsequent disintegration.

Fischer[14] (1907), employing Bielschowsky's neurofibril method in a series of observations on the cortex of senile dementia and other psychoses, could find the characteristic plaques in senile dementia only. Indeed, even in this group of the psychoses, plaques were confined to cases of presbyophrenia. The pathological process which led to the formation of plaques Fischer attributed to a "drusy necrosis"; and he was convinced that their presence in a given brain was of sufficient diagnostic importance to differentiate presbyophrenia from "simple senile dementia" and the non-senile psychoses. Later (1908), after having studied thirty-seven cases of senile dementia, fifty cases of paralytic de-

mentia and twenty-three cases of other psychoses, Fischer[15] was still unable to find plaques in cases other than presbyophrenia. In Fischer's earlier communication, club-like proliferations of axis cylinders surrounding the plaques were described, and these were assumed to be the result of the necrotic process acting as an irritant upon the nervous elements. In the later report, the opinion as to the nature of the plaques (necrotic foci surrounded by club-like proliferations of axis cylinders) was modified and a bacterial origin was argued.

If, as Fischer maintained, the plaques are to be found in cases of presbyophrenia only (he looks upon them as the anatomical substratum of this psychosis) and if their bacterial origin be true, there would be good warrant for a revision of our conceptions of presbyophrenia. The psychosis would then come naturally in the infective-toxic group and would possess a histopathology as definite as that of general paresis. But the plaques are found in cases other than presbyophrenia, as this study and the observations of others show. G. Oppenheim[16] found plaques in the brain of an aged man dying from gastric carcinoma but who had always enjoyed mental health. Perusini[1] mentions the case of a young tabetic (thirty-one years of age and without psychosis) in whose brain Alzheimer found plaques morphologically and tinctorially identical with the miliary areas encountered in certain senile brains. In the present series of cases (*vide infra*) a man eighty years of age and without psychosis exhibited plaques in abundance. Moreover, the bacterial origin of the plaques has not been substantiated by subsequent observers, nor can the findings in the group of cases here reported support the claim.

More recently, Fischer[17] has designated the plaques as *sphærotrichia multiplex cerebri* and contends that in the pictures furnished by the Bielschowsky method, the fibrillary components of the plaques are the most characteristic and important, while the other cellular elements are only secondary and the expression of a reaction to nerve fibril proliferation.

For Wada,[18] the plaques are nothing more than circumscript necroses of the nervous parenchyma and glia apparatus.

Among the more recent investigators who have studied the plaques, Bonfiglio[19] (1908) contends that these miliary areas cannot be explained as the result of focal alterations in axis cylinders, as Fischer claims, nor as the result of deposition in the brain tissue of the split products of pathological metabolism, which some hold to be the case; but the changes which give rise to the formation of plaques begin with degenerative alterations in ganglion cells and the immediately surrounding terminal arborizations of axis cylinders. Bonfiglio sees in the central nuclear-like

mass which characterizes the majority of plaques, nothing but the necrotic remains of a ganglion cell. This is a view quite in harmony with the position originally taken by Redlich.

G. Oppenheim[16] (1909) in six cases of senile dementia with symptoms of presbyoprhrenia could demonstrate the plaques in three of the cases. Two out of three cases of senile dementia with multiple arteriosclerotic foci exhibited a few plaques, while in the brain of an aged man (seventy-seven years at death) dying of gastric carcinoma and without psychosis, plaques were abundant. Oppenheim also described club-like swellings surrounding the plaques which, however, were shown by Weigert's glia stain to be glia fibers and not axis cylinders.

Perusini[1] (1909) reports in detail four cases past middle life which offered clinically much the same mental condition and anatomically presented many plaques, together with most extraordinary intracellular degeneration of neurofibrils in cerebral ganglion cells. Preliminary reports had been made on two of Perusini's cases, one by Alzheimer[10] (*vide supra*) and the other by Bonfiglio[19]. Perusini's cases were characterized by a slow but steadily progressive mental enfeeblement, disturbances of orientation, difficulty in naming objects, intellectual deficit—amounting in some of the cases to complete mental blindness—and disturbances of the projection system. Employing Alzheimer's original description, the peculiar neurofibril changes were thus reported: "In an otherwise apparently normal cell one or more fibrils, on account of increased thickness, or intense staining, stand out prominently. Following this initial change, many of the neighboring fibrils of the same cell undergo a like change and are then welded together to form a thicker and more darkly stained bundle which gradually comes to the surface of the cell. Finally, the nucleus and interfibrillary protoplasmic substance of the cell disappear completely and all that remains of the cell is a darkly stained snarl of neurofibrils." The plaques were described as consisting of a central darkly-staining homogeneous mass and two concentric rings. In the inner ring substances of variable chemical composition are deposited, the exact character of which is difficult to determine, while the outer ring is glial in nature.

Although admitting that there is much unknown and many points not clear as to the clinical significance of these structures, Perusini offers good reasons for considering the miliary plaques as resulting from degeneration or disintegration of nervous elements. Following the destruction of nervous elements, there is a thickening of the glia reticulum, in the meshes of which the products of pathological metabolism are deposited and undergo further chemical elaboration. The surrounding glia elements react

to the deposit in much the same way as to a foreign body, by an active fiber proliferation seeking to encapsulate the focus.

Huebner[2] (1909) reports two cases over sixty years of age, not insane, sixteen cases with clinical histories of senile dementia, senile confusion, senile persecutory delusions, late epilepsy, multiple focal softenings and aphasia diagnosed on the basis of anatomical findings. Besides, fourteen cases comprising tuberculous meningitis, purulent meningitis, brain tumor, multiple sclerosis, mania, general paresis, dementia præcox, Huntingdon's chorea and cerebral arteriosclerosis were examined. Huebner did not find plaques in the two cases without psychosis, but found them in the case of a manic-depressive seventy-nine years of age who, however, had shown no considerable dementia during life. Plaques were also found in the case of an alcoholic dement sixty-six years of age and in the neighborhood of a recent hæmorrhage into the optic thalamus of an elderly man—a senile dement sixty-six years of age with clinical symptoms similar to those of general paresis. In the special group of fourteen cases, no plaques were found. Huebner sought to establish whether or not the presence of plaques in a given series of brains had any worth as a differential diagnostic factor for presbyophrenia and also to determine their medico-legal importance. The conclusions of this observer are as follows: the presence of miliary plaques in the brain is not characteristic for any special psychosis; that the subject had at least reached the fifth decade is the most one could medico-legally advocate.

Bickel[20] (1910) reports three cases—recent apoplexy in a subject sixty-five years of age, a focal lesion of five months' duration as the result of apoplexy in a subject seventy years of age and the case of a young girl eighteen years of age with solitary tubercle of the pons—differentiating two varieties of plaques. One of these varieties is composed of dark and yellow granules (blood pigments) which have been engulfed by phagocytic cells and as the result of grouping or coalescence of such cells plaques have been formed. The other variety of plaque described by Bickel is claimed to be the direct result of ganglion cell degeneration. It is this latter variety which bears a closer resemblance to the plaques discussed in this paper and to which Bickel assigns an origin identical with that advocated by Redlich.

Barrett[3] (1911) describes the clinical course and anatomical findings in eight elderly subjects coming to autopsy in which plaques were found, seven of the cases presenting the Alzheimer type of intracellular neurofibril degeneration. Barrett's cases, with one exception, were "distinctly of the senile period . . . . differing from the presbyophrenic form of senile insanity, and

pathologically from the arteriosclerotic form." Symptoms of organic brain disease were prominent. Barrett suggests that the peculiar neurofibril changes in combination with plaques and certain focal atrophies found in his cases offer "explanations of a special clinical group of senile psychoses."

Simchowicz[4] (1911) in the report of a study of one hundred and eight brains from elderly persons, fourteen of which were from subjects dying without psychosis, thirty-six from subjects with psychoses which were not of the senile type, the remainder senile psychoses, lays special stress on the presence of plaques as a diagnostic anatomical feature of senile dementia. Simchowicz is of the opinion that those cases which course, clinically, as senile dementia and yet fail to show plaques, anatomically, probably belong to a special group, or to other already differentiated psychoses. Sixteen cases so considered by Simchowicz are not convincing; the majority of the cases, judging from the histories which he cites, could scarcely be considered from their clinical histories as "senile dementia without a doubt" (to use a not uncommon phrase) and from the anatomical findings many would be ruled out instanter. Regarding the plaques, this observer concludes: With certain exceptions, plaques occur in the brains of the aged only. Although appearing sparsely in the brains of elderly subjects without psychoses, plaques may be found with fair regularly from the eightieth to the ninetieth year onward. Certain psychic and somatic diseases may hasten the appearance of plaques. Only in senile dementia are plaques found in great abundance.

For Simchowicz, the difference between normal senium and senile dementia is but a difference in degree and he sees in the plaques to be found in the brains of elderly persons dying without psychosis, together with other interesting histological data which are ably reported in his paper, further confirmation of this view.

Alzheimer[5] (1911) reports an additional case of the type which he first described and of the same character as the group of cases reported by Perusini. The case is an example of "Alzheimer's disease" described in the eighth edition of Kraepelin's *Klinische Psychiatre.** The peculiar type of intracellular neurofibril degeneration, however, was not present. The general character of the plaques, ganglion cell and glia alteration were essentially such as characterize typical senile dementia. The inference to be drawn from cases of this character is, that there exists a clinical state which may be designated as precocious senile dementia. Convincing illustrations are given of the histological composition of the plaques which relieve these structures of much of their

* Vide also papers in this volume on Alzheimer's Disease, by Fuller, and Fuller and Klopp.

former mystery. In this case, plaques were found not only in the cerebrum, but in the cerebellum, medulla and cord as well.

III. Material Employed and Scope of the Present Study.

The brains of thirty-three elderly persons dying with psychoses chiefly of the senile type, small portions of brains from six elderly persons dying without psychoses and fifty younger subjects dying of a variety of mental diseases furnished the material for this paper. So far as warranted from the available material, an attempt has been made to determine the frequency of miliary plaques in brains of the aged, the clinical significance and the finer structure of these characteristic bodies. Further, there has been an effort to establish the fundamental histological differences, if any such exist, between plaque cases and other cases of the same general clinical and gross anatomical grouping in which no plaques were found.

The deductions noted at the end of this paper have been drawn chiefly from the study of the thirty-three elderly subjects dying insane. Material from elderly subjects without psychosis was limited; nevertheless, examination of the brain tissue at hand and a review of reported cases were essayed with the purpose of determining the extent to which the miliary plaques here considered are an accompaniment of old age—regardless of the existence or non-existence of a psychosis. The study of material from elderly subjects, however, has been supplemented by a re-examination of a number of neurofibril slides on file at the pathological laboratory of Westborough State Hospital, undertaken with the hope of obtaining additional data to aid in a satisfactory solution of the matters in question. The supplementary material—fifty younger subjects noted above—includes cases of general paresis, formerly so-called involution melancholia, manic-depressive insanity, dementia præcox, luetic meningo-encephalitis, tuberculous meningitis, purulent meningitis (streptococcus infection), brain tumor, chronic alcoholism, microcephalic idiocy, epileptic insanity and psychosis associated with diffuse degenerations of the spinal cord (Putnam type) *. Finally, there has been added a consideration of the nature of senile dementia, such as may be deduced from the general histopathological picture of the brains of persons dying from this form of mental disease, and a comparison of the histological lesions of the plaque and non-plaque material from elderly subjects with reference to their place in the general histological scheme of senile dementia.

All of the thirty-three cases of elderly persons dying insane, with three exceptions, fifty-six, fifty-nine, sixty years of age respectively, were well within the period of senium. From the clinical data obtainable, and in a certain sense from the anatomical

*Since determined as multiple sclerosis.

findings as well, these cases fall readily into three chief groups: (a) senile dementia, including "simple senile dementia" and presbyophrenia, (b) arteriosclerotic dementia, with or without gross focal lesions, and (c) a group in which it is difficult to appraise clinical symptoms and anatomical findings. In some of the cases of the last group, there is little doubt as to the presence of clinical and anatomical signs of senile involution, but whether or not these have been superimposed on changes which had their origin at a much earlier period during the life of the subjects, the writer is unable to determine.

The incidence of age is shown in the following table:

TABLE I.

Decade.	No. of cases.
6th	3
7th	11
8th	10
9th	9
Total cases	33

IV. Analysis of Gross Anatomical Findings with Reference to Plaques.

The material was first arranged in two groups, (a) atrophic brains, (b) normal-weight brains, and studied with reference to the frequency with which atrophy and plaques were associated and the possible etiological relationship of brain wasting to the formaton of plaques. The miliary plaques with which we are concerned were first reported in connection with cases of senile cerebral atrophy (*vide supra* Redlich, Blocq and Marinesco); it seemed well, therefore, to establish for this series the extent to which the presence of plaques was dependent upon, or only coincident with brain wasting.

Atrophic Brains.—Twenty-six cases in the series, fifteen men and eleven women, presented atrophic brains. Eleven of the atrophic brains, six from males and five from females, exhibited plaques. But the two most atrophic brains in the entire series, 821.1 and 900.1 grams respectively, both from women, failed to show the characteristic miliary structures.

Normal-weight Brains.—Assuming 1358 grams as the normal average brain weight for men and 1235 grams as the normal average weight for women, seven subjects furnished brains well within the range of normal weights. It is well to note, however, that of the seven normal-weight brains four exhibited focal atrophies, two of these in addition presenting multiple focal softenings and lacunæ. The remaining three cases of the group were without

macroscopic evidence of atrophy. Five of the seven normal-weight brains, four men and one woman, yielded plaques in abundance. Of the four normal-weight brains with focal atrophies, three contained plaques.

While the conditions which make for atrophy may also be directly or indirectly responsible for plaques, it is obvious from this analysis that plaques cannot be postulated from atrophy alone. Forty-two and three-tenths per cent of the atrophic brains in the series and fifty-seven per cent of the normal-weight brains exhibited plaques. A predisposition in favor of normal-weight brains, however, must not be assumed, for the reason that the cases are too few from which to draw such conclusions; furthermore, as will be shown later, plaques are probably dependent upon quite different factors.

A second grouping of the material was effected with the view of ascertaining the possible influence of coarse brain lesions in the production of plaques, lesions such as hæmorrhages into the brain substance and meninges, gross focal softenings, lacunæ, etc., resulting from arteriosclerotic cerebral vessels.

It has been shown that more than half of the brains which were well within the range of normal-weight presented focal lesions—atrophies, softenings and other evidence of cerebral arteriosclerosis. It has also been shown that atrophic as well as normal-weight brains may exhibit plaques. On the other hand, many brains in which, judging from gross anatomical findings and the clinical course as well, one might reasonably expect to find plaques, proved disappointing, while frequently some of the least suspected subjects were the most fruitful in their yield of the characteristic structures. Thus an attempt to establish, as it were, a type of brain at the autopsy table which would show plaques on microscopical examination has been most baffling. The following groups while not wholly satisfactory give some idea of the general gross condition of the brains in this series of cases in which plaques were found on microscopical examination:

(1) *Atrophy, Arteriosclerosis Without Focal Lesions.*—Ten brains constitute this group, five exhibiting plaques. Thus 31.2 per cent. of all plaques cases were found in group 1.

(2) *Atrophy, Arteriosclerosis, Focal Lesions.*—Fifteen brains are included in this group, in six of which plaques were found. This group, then, furnished 37.5 per cent of the plaque cases.

(3) *Normal-weight Without Focal Lesions, Arteriosclerosis.*—Of the two brains so grouped, 1 or 6.25 per cent of the series showed plaques in abundance.

(4) *Normal-weight, Focal Lesions, Arteriosclerosis.*—This group contained five brains, four showing plaques. The percentage of all plaque cases coming from this group was 25.

(5) *Atrophy Without Arteriosclerosis.*—One brain was so classed, which however, is open to question. An entire absence of arteriosclerosis can not be maintained, for the basilar artery exhibited macroscopically a few atheromatous patches (possibly syphilitic arteritis of the Heubne rtype). The case offered clinically many features common to psychosis of the involution period, and yet the histological lesions must be classed as a combination of chronic meningo-encephalitis with cerebral syphilis of the endothelial type (Alzheimer[21]), or the combined inflammatory and non-inflammatory form of cerebral lues (Nissl).[22] No plaques found.

Summarizing the results of the gross anatomical grouping of the material we find: (a) out of a total of thirty-three brains from elderly persons dying insane sixteen or 48.48 per cent. furnished plaques. (b) Ten or 62.5 per cent of the plaque brains exhibited gross focal lesions. (c) Fourteen or 87.5 per cent of plaque brains displayed macroscopically atrophy which was either diffuse or focal in character. Instances of the combination of the two forms of atrophy were common.

Clinical abstracts and anatomical diagnoses of the cases presenting plaques are given in the succeeding section.

V. The Plaque Cases Among Elderly Subjects Dying Insane.

Clinical Abstracts of Plaque Cases.

Case i.—W. S. H., No. 8723, a retired farmer, eighty-four years of age, with a negative family history for nervous and mental diseases, enjoyed general good health until the middle of his eighty-second year. About that time, mental and pronounced physical failure began to be apparent and for the eighteen months prior to admission was steadily progressive. Financial losses seem to have played a role in the mental breakdown. Loss of weight, general asthenia, insomnia and memory defect were among the first troublesome symptoms. Memory became impaired, so that, even the grossest events, remote and recent, were recalled with difficulty or forgotten entirely. He could not recall the names of old associates and frequently forgot the names of those in his immediate family. The gaps in memory were often filled in with fabrications. In the two months preceding admission to hospital, periods of confusion had been noted, he roamed about the house in an aimless manner and on one occasion attempted to move the lighted cook stove from one room to another. Other equally senseless and dangerous acts were attempted in the confused periods. He frequently talked aloud to himself and at such times the speech content was paraphasic or jargonic. He gave evidence of auditory hallucinations. There was loss of bladder and rectal control which made it more difficult to care for him at home.

On admission to Westborough State Hospital, a markedly emaciated and feeble old man barely able to walk, whose gait was that of senile trepidant abasia, presented. The heart sounds were feeble and irregular, no murmurs detected. Respirations 16 per minute, râles of all kinds heard over the chest. The skin was very dry and ashy in appearance, presenting recent bruises over shoulder and scalp.

Knee jerks absent (resistance?); elbow, wrist, pectoral and abdominal reflexes elicited; cremasteric absent. Left sided Babinsky; no Oppenheim;

no evidence of cranial nerve palsies or other paralyses. Examination for sensory disturbances unsatisfactory, patient did not coöperate, but pain sense intact.

Mentally the patient took no notice of his surroundings. Although he attempted replies to questions, his answers were irrelevent, incoherent and at times paraphasic. The emissive quality of speech was thick, low-pitched and attended with considerable motor difficulty. There was apparent mental confusion and quite a little psycho-motor unrest, all of which made the examination quite unsatisfactory.

The day following admission, the symptoms of a cerebral hæmorrhage suddenly developed: loss of consciousness, clonic spasms of the right side of face and right arm, followed by a right hemiplegia. Consciousness was not regained. A sub-normal temperature (94°F. rectal) was carried constantly until his death four days later.

Anatomical Diagnosis.—Increased density of calvarium, dural herniæ (invaginations of pia and Pacchionian granulations), pachymeningitis hæmorrhagica interna, chronic leptomeningitis, atrophy of cerebral gyri, advanced cerebral arteriosclerosis, granular ependymitis; cardiac displacement (heart placed at right angle to long axis of body), abnormally long ascending aorta (9 cm.), chronic endocarditis; chronic pleuritis; congestion and interstitial hepatitis; chronic perisplenitis and interstitial splenitis, chronic interstitial pancreatitis; gastritis; chronic interstitial nephritis; cystitis, enlarged prostate.

Case II.—W. S. H., No. 6753, a man seventy years of age suffered an attack of influenza two years ago, up to which time he had always enjoyed good health. Syphilitic infection was denied. He had never used alcohol, had been successful in life as a jeweler and was considered above the average mentally. Following the attack of influenza he never regained his former strength; practically all this period he grew weaker, slept poorly and lost in weight. Impairment of memory was progressive. He was finally able to recall only the grossest events of the remote past. He had a tendency to wander away from home and could not find his way in previously familiar localities. There were periods of considerable motor restlessness, apprehension and excitement, during which he gave expression to delusions of ill-treatment on the part of his family. During periods of excitement he jumped from a window, assaulted his wife and daughter with a chair, tore bed clothing and was otherwise destructive. The patient's father died of apoplexy; no other family history of importance elicited.

On admission, a poorly nourished old man presented a general appearance of feebleness. There was a systolic murmur; respirations shallow, slight dullness over both apices. The skin was dry; arcus senilis; peripheral arteriosclerosis and general tremor were present.

Neurological Examination.—Knee-jerks slightly increased; abdominal, cremasteric, elbow and wrist reflexes elicited. Slight swaying to Romberg; no paralyses of cranial nerves or other paralyses; no cutaneous sensory disturbances detected. Pupils react sluggishly to light and accommodation.

Mentally the patient was without grasp on his surroundings; he was disoriented for time and place, and showed a marked impairment of memory. He talked freely but was rather prolix; and thought his relatives had sent him to prison. He cried easily without any apparent adequate cause and exhibited a mild depression. No evidence of aphasic disturbances; no hallucinations determined.

The day following admission there was considerable motor restlessness and crying, a condition which persisted for three weeks, when he developed a temperature of 103 F. (rectal). Restlessness increased and visual and auditory hallucinations developed. He became unconscious during the first day of the increased temperature and remained so for five days. Death.

Anatomical Diagnosis.—Chronic external pachymeningitis, atrophy of pia, hydrocephalus ex vacuo, focal atrophy of cerebral gyri, advanced cerebral arteriosclerosis, multiple focal softenings and lacunæ in corona radiata and basal ganglia; chronic interstitial hepatitis; chronic interstitial splenitis; chronic interstitial nephritis; acute enteritis.

Case III.—W. S. H., No. 8600, a man seventy-two years of age, concerning whom his immediate relatives could give no information as to his previous history since youth, except to state that for many years he had complained, in letters sent home, of kidney disease and rupture. The patient was of a roving disposition, going from one place to another all over the country, remaining nowhere any length of time. Two paternal cousins are patients at this hospital.

In the latter part of July, 1909, the patient suffered an attack of ptomaine poisoning during which he was delirious. He was seemingly making a good recovery when on August 4th, about ten days after the onset of the toxic disturbance, he suddenly got out of bed, left his room and attempted to force an entrance into other rooms of the house where he was lodging. Unsuccessful in these attempts he finally jumped from a window and made his way to the street, where he created a scene while being returned to his lodging. Immediately following this episode the patient was committed to the Boston State Hospital as an emergency case. On arrival at the hospital he was reported as being in a weak and exhausted condition. For four days he was kept in bed and during this period was quite irritable and fault-finding, and made many unreasonable demands. There does not appear to have been any clouding of consciousness. Six days after admission to Boston State Hospital his physical condition improved sufficiently to warrant his being up and dressed. Following this he was less fault-finding and on the whole quite cheerful. Transferred to Westborough State Hospital September 22, 1909.

On admission, a poorly nourished old man who looked his age. Moderate use of alcohol was admitted, previous venereal disease denied. The heart's action was weak and irregular and there was increased cardiac dullness; no murmurs detected. Pulmonary sounds not pathological; no lesions of other viscera noted. The skin was flabby, parchment-like, and, except for head and eyebrows, entirely devoid of hair. Well defined arcus senilis and marked peripheral arteriosclerosis presented.

Knee, wrist, elbow, pectoral, abdominal, cremasteric and plantar reflexes elicited. No Babinsky; no Oppenheim phenomena. Coördination tests fairly well executed, although there was a general tremor of the senile type. The tongue deviated to the right when protruded and there was slight swaying to Romberg. Pupils reacted promptly to light and accommodation. No sensory cutaneous disturbances detected.

Mentally the patient was mildly exhilarated; he expressed ideas of self-importance and frequently assumed dramatic attitudes. He also gave expression to delusions of persecution, repeating frequently, "Wealth keeps me here." He insisted that he was drugged by the physician who attended him before he was sent to Boston State Hospital and in order to avoid a suit which he intended to bring against the doctor, the latter had him committed as an insane person. He was oriented for the time and place. Memory was defective especially for recent events. He was rather garrulous and prolix. The above was much his condition throughout, memory defect increased all the while. April 6, 1910, seven months after admission, he complained of considerable pain in the cardiac region which grew worse until death, nine days later.

Anatomical Diagnosis.—Pachymeningitis hæmorrhagica interna, chronic leptomeningitis, cerebral arteriosclerosis; cardiac dilatation; emphysema; interstitial hepatitis; gastritis, enteritis; chronic interstitial nephritis.

Case IV.—W. S. H., No. 8939, a man sixty-six years of age without previous mental disease or any other serious illness, enjoyed good health until the age of sixty-four. A moderate use of alcohol was admitted, syphilis denied. During a hot day two summers ago the patient went fishing. The greater part of the day was spent on the river fishing from a small boat. In the late afternoon, after reaching the shore and while preparing to start for home, he suddenly became very weak in the legs so that he could not walk without assistance and had to be practically carried by two men. At the same time his speech became affected—for the most part unintelligible—and with equal suddenness his vision was so impaired that it was very doubtful whether he could see at all. This attack was diagnosed a "sun-stroke,"

for which he was accordingly treated. His son, who was with him at the time and furnished the information, states that, dating from this episode he rapidly failed physically, but the mental failure was gradual and only during the last two months had it been pronounced. Memory, which became impaired soon after his illness, was so deficient that at times he was unable to recall the names of his immediate relatives. There were periods of confusion in which he would wander about aimlessly. His gait became so impaired that he could not go without stumbling a great deal and falling frequently. When down, the patient was too weak to rise without assistance. He was actively hallucinated (auditory), noisy and restless at night. For three weeks prior to admission there was loss of bladder and rectal control.

On admission, a fairly well nourished old man presented, who looked, however, considerably older than his reported age. When assisted he was able to walk, but unaided stumbled and fell easily. The gait was spastic. The senseless resistance which the patient offered to everything rendered the examination unsatisfactory, but an enlargement of the cardiac area was detected and the heart's action was weak and irregular. No pathological pulmonary sounds were noted, or gross lesion of the abdominal viscera. There were varicose veins of the lower extremities, marked arcus senilis and peripheral arteriosclerosis; all tendon reflexes active. The pupils were unequal and reacted sluggishly to light; accommodation test unsatisfactory. There was a nystagmus of the left eyeball. A general tremor was present and considerable motor unrest.

Mentally the patient was disoriented, for the most part confused. During the short intervals when he seemed fairly clear, he mistook the hospital personnel for old acquaintances. The speech was drawling and frequently unintelligible—a mere jargon. Many of the questions addressed to him were apparently not comprehended, for instead of replying he often looked about in a bewildered manner. Stool and urine were passed involuntarily. This was his condition throughout. A week after admission a lobar pneumonia developed from which the patient died.

Anatomical Diagnosis.—Chronic external pachymeningitis, chronic leptomeningitis, cerebral atrophy, advanced cerebral arteriosclerosis, no gross focal lesions of brain; marked cardiac hypertrophy (*cors bovis*), chronic endorcarditis, chronic interstitial myocarditis, atheromatous degeneration of aorta, coronary and peripheral arteriosclerosis; pleuritis, pulmonary congestion and œdema; hepatic congestion; moderate splenomegally, interstitial proliferation; interstitial pancreatitis; moderate interstitial nephritis.

Case V.—W. S. H., No. 8453, a woman seventy-nine years of age, had suffered several attacks of serious illness during her life: typhoid fever at the age of sixteen, from her thirtieth to her fortieth year chronic gastritis which gave much trouble, a second attack of typhoid with "brain fever" at fifty and when fifty-one an attack of insanity which lasted for 18 months. Following the attack of insanity there was recovery with defect, for she was never quite the same as before—absentminded, disinclined to meet strangers, feared going out alone, easily excited and given to talking to herself. Nevertheless, it was possible to care for her at home without any inconvenience to the peace of the family. At the age of seventy-four memory defect began to be apparent and as this increased, the gaps in memory were quite regularly filled in with fabrications. Periods of confusion were frequent. Contrary to her life-long disposition she became very irritable, and developed the idea that she was being persecuted and otherwise ill-treated by her relatives. With advancing mental deterioration she frequently threatened violence, was noisy and restless at night, talked obscenely, complained of numerous parasthesias, lost control of rectal and bladder functions, gave evidence of auditory, visual and tactile hallucinations and finally failed to recognize the members of her household. No history of alcoholism or of venereal disease. Family history negative.

On admission an extremely anæmic, emaciated, feeble, old woman who was unable to walk. She presented a general senile tremor and a tumefaction of the left parotid gland. The heart's action was labored and intermittent and there was a harsh friction sound at the apex. General peripheral

arteriosclerosis. Blood examination revealed Hb. 14, red cells 1,600,000. Respiratory sounds were harsh, no râles. Examination of urine showed the presence of hyaline and fine granular casts. Paralysis of bladder (necessary to catheterize) and rectal incontinence existed. Quite a little negativism was exhibited.

Both knee jerks were increased and a questionable double Babinsky elicited; other reflexes unsatisfactory. Left cornea opaque; right pupil reacted sluggishly to light; patient did not coöperate for accommodation test; cutaneous pain sense intact. Patient complained of numerous paræthesias of trunk and extremities (lower). Hearing in right ear good, in left greatly impaired.

Mentally the patient exhibited alternating periods of confusion with periods of a fair degree of clearness. She was completely disoriented and without insight. After two hours in the hospital she could not tell how long here or where she came from. She gave expression to delusions of persecution, believing she was drugged and annoyed constantly by enemies. Memory impairment for both remote and recent events was marked.

After a month in hospital, during which there were periods of stupor and somnolency alternating with periods of excitement, the patient seemed a little better mentally than when admitted. After two months in hospital, a diarrhœa developed which so weakened her that death followed in a few days after its onset.

Anatomical Diagnosis.—Chronic external pachymeningitis, chronic leptomeningitis, hydrocephalus, ex vacuo, atrophy of cerebral gyri, advanced cerebral arteriosclerosis, multiple cerebral lacunæ and softenings; chronic endocarditis, chronic aortitis, advanced atheromatosis of aorta, ilac vessels and peripheral arteries, interstitial myocarditis; hypostatic pneumonia, chronic pleuritis; eneritis; chronic interstitial hepatitis; chronic interstitial nephritis.

Case VII.—W. S. H., No. 8892, a man eighty-three years of age sustained a Pott's fracture in a street railway accident twelve years ago, up to which time he had suffered no serious illness or previous injury of any moment. Since this street car accident he has steadily failed, physically as well as mentally. Ten years ago he passed through an attack of scarlet fever which left him deaf in the left ear. It was noted that his memory was poor soon after the accident and the impairment later became extreme. During the past four years he was a great care to his family, showing a tendency to wander away from home in an aimless and confused manner. For two years he had frequent short periods of excitement, at which times he threatened violence and on one occasion very nearly killed his aged wife by choking her. He was hard of hearing for some years and the deafness increased perceptibly. There were periods when he was extremely noisy, other times when he was given to weeping a good deal, and occasions which his friends described as "stupid" were frequent. He was untidy and extremely garrulous, although the speech was at times very indistinct and unintelligible on account of motor difficulty with resulting defective pronunciation, and also on account of its paraphasic or jargonic character.

On admission an obese, somewhat jaundiced and feeble old man presented who looked his age, and who was unable to stand alone, but when supported could walk, although in a halting and extremely trepidant manner. There was an enlargement of the area of cardiac dullness, and a systolic murmur heard over the whole of the præcordia, though best at the apex. Vesicular breathing and râles were heard over both lungs. Varicose veins of the lower extremities and peripheral arteriosclerosis were present. Arcus senilis. Sight was defective in both eyes (presbyopia), impairment of hearing in right ear and total deafness in left. Deep and superficial reflexes elicited; pupils reacted to light and accommodation. There was a loss of bladder and rectal control.

Mental examination was difficult on account of the impairment in hearing, but it was ascertained that memory was defective, especially for recent events. Insight was superficial. There was a degree of depression and some apprehension when talking of home and family, but otherwise a mild euphoria existed.

The patient was in hospital for a period of five and a half months, during all of which time he grew worse. There were periods of irascibility, mental confusion and occasionally fabrications to fill in memory gaps. Finally there was loss of cardiac compensation resulting in death.

Anatomical Diagnosis.—Increased density of calvarium, chronic hypertrophic leptomeningitis, internal and external hydrocephalus, advanced cerebral arteriosclerosis, atrophy of cerebral gyri; chronic endocarditis, chronic interstitial myocarditis; pleuritis, emphysema; chronic interstitial hepatitis; chronic interstitial splenitis; chronic interstitial nephritis; cystitis.

Case VII.—W. S. H., No. 8652, was a man eighty-nine years of age. Very meagre family and personal history was obtained from the overseer of the poor. Father of patient was reported to have been a hard drinker, he himself a moderate user of alcoholic stimulants. About a year prior to admission to hospital, delusions were evidenced to those who knew him. About this time it was noted that his memory was very defective for remote as well as recent events, and that he frequently fabricated experiences. During the year he had grown steadily worse. He was often noisy and restless at night, extremely profane and obscene in his language, irritable, stubborn (negativism) ; he feared that his belongings would be stolen, made indecent proposals to women and exposed his person in public.

On admission, a markedly emaciated old man, unkempt in appearance, presented a skin eruption due to scabies, a general senile tremor and sennile trepidant abasia. Heart sounds accentuated, rapid, irregular; no murmurs detected; area of cardiac dullness normal. Respiratory sounds were not pathological. No disturbances of reflexes that were of significance; sight and hearing in fair preservation.

Mentally, comprehension was good as evidenced in the speech reactions; disorientation for time and place. Memory was defective for recent events. The patient was irritated by the questions of examiner. He defecated and urinated in bed.

During hospital residence there was no improvement in his condition. He was noisy and irritable when not asleep. The patient, however, slept a great deal. Untidiness persisted. A dysentery developed soon after admission and persisted to the end, the patient dying on the twelfth day after admission.

Anatomical Liagnosis.—External pachymeningitis chronica, leptomeningitis chronica, cerebral atrophy, advanced cerebral arteriosclerosis; chronic endocarditis; pleuritis, septic pneumonitis; chronic interstitial hepatitis; chronic interstitial splenitis; gastritis; chronic interstitial nephritis.

Case VIII.—W. S. H., No. 8627, a man sixty years of age had suffered no serious illness until the present mental attack which the family believed had its onset five years ago. At that time the announcement by telegram of the sudden death of a son from whom he expected a visit affected him greatly. After this event he seemed to lose interest in things in general, was hard to please and kept to himself—conduct quite contrary to his former genial disposition and social habits. It was noticed too, that, dating from his son's death, his speech utterances were slightly defective—often indistinct, difficulty in pronouncing many common words and in finding the proper word to employ. He also complained of numbness in the right arm, but was able to continue at work as a machinist. Three months before admission to hospital he suffered a second "slight shock" which, however, did not incapacitate him for work. Finally, four days before admission, he returned home rather late from work complaining that he could not see. Soon after arriving home he became unconscious, associated with which there was considerable restlessness and moaning as though in pain. The day following, consciousness was regained. At this time the patient had partial insight into his condition, but exhibited a degree of apprehension which perhaps was not excessive considering the gravity of his case. During the three days before admission he was quite restless and depressed, finally refusing food for fear of being poisoned. The father of the patient died from apoplexy.

On admission, a fairly well developed man, but he was extremely

nervous and haggard in appearance. He looked considerably older than his reported age, and walked with a spastic gait. Other than increased action and accentuation of the first sound, the heart offered nothing of special interest. There was, however, general peripheral arteriosclerosis. Lungs, negative; kidneys, chronic interstitial nephritis (urinalysis). Other abdominal viscera negative.

The protruded tongue deviated to the left. The pupils reacted sluggishly to light and accommodation. Elbow, wrist, pectoral and abdominal reflexes active. Knee jerks increased, especially the right, and there was a right sided Babinsky. Poor coördination of upper extremities, gait spastic, station unsteady.

Good orientation for place and persons, poor for time. Emotionally, the patient was unstable, crying a great deal without adequate cause. On the whole, mental processes were slow. Questions were comprehended slowly and there was a motor difficulty in getting out his words.

Following admission the patient improved rapidly and in less than a month was permitted to leave the hospital. For a few weeks after leaving hospital he continued to do well, then he again grew irritable and fault-finding, showed a decided memory defect and failed physically. Four months after leaving hospital he was readmitted with all symptoms noted at first admission intensified. Nevertheless, there was considerable insight exhibited by patient and he admitted periods of confusion. Two weeks after his return to hospital a cerebral insult occurred. Consciousness was not recovered, death four days later.

Anatomical Diagnosis.—Pachymeningitis hæmorrhagica interna, chronic hypertrophic leptomeningitis, advanced cerebral arteriosclerosis, recent hæmorrhage into the right optic thalamus, soft brain; cardiac hypertrophy; pulmonary hypostasis; hepatic congestion; chronic interstitial nephritis, cystic degeneration of kidneys.

Case IX.—W. S. H., No. 8633, a woman eighty-one years of age showed mental symptoms at the age of seventy-eight. She had had most of the children's diseases, including scarlatina at the age of two; menopause at fifty without special mental symptoms. Mother of patient was insane (senile dementia). At seventy-eight memory defect was noted and later romancing was common. About this time she charged her husband, an old man, with dissolute living, and developed the idea that neighbors were "down on her." These delusions increased rather than diminished, in consequence of which she frequently threatened violence. Auditory and visual hallucinations became so prominent that it was necessary to commit her.

On admission, an old woman, well developed and well preserved physically, presented. She was, however, extremely resistive and would not submit to a physical examination, giving as a reason that she had been illegally sent to hospital and that there was nothing the matter with her. There was evidence of peripheral arteriosclerosis. She admitted "voices" and charged enemies as being responsible for her presence here. She was very bitter against her husband. Comprehension good; orientation defective. School knowledge deficient and memory greatly impaired, especially for recent events.

The patient remained in hospital a year and three months, during which period she was for the most part, sullen and irascible. She continued to show marked disturbances of memory and was frequently hallucinated. A week before she met death with an accident—a fall resulting in an intracapsular fracture of the femur. The day before death, cerebral insult, followed by death within twenty-four hours.

Anatomical Diagnosis.—External pachymeningitis, pachymeningitis hæmorrhagica interna, general cerebral congestion, atrophy of cerebral gyri, advanced cerebral arteriosclerosis, no other gross focal lesions of brain; chronic endocarditis, general peripheral arteriosclerosis; pulmonary congestion and œdema; fatty liver; chronic interstitial nephritis; intra capsular fracture of head of femur.

Case X.—W. S. H., No. 4865, a man, seventy-one years of age, who previous to his mental breakdown had never suffered serious illness, began

to show mental symptoms at the age of sixty-six. These were at first mild—an unaccustomed garrulity, and memory defect which gradually increased. Later, auditory hallucinations appeared, and he developed the idea that his relatives wished to poison him. Added to these there was loss of bladder and rectal control.

On admission, a fairly well nourished old man presented a general senile tremor, the gait halting and extremely trepidant. The heart's action was rather rapid and feeble. There was general peripheral arteriosclerosis. Lung examination revealed nothing of significance. A urinalysis showed the existence of a chronic interstitial nephritis. The pupils reacted normally to light and accommodation and were circular and equal; tendon reflexes sluggish; cutaneous pain sensations diminished.

Mentally the patient was dull and apparently indifferent to his surroundings. He comprehended slowly. Memory was defective for recent events, good for remote happenings. He expressed delusione of poisoning, as noted above.

Following admission there was gradual improvement for a period of seven months, when the patient suffered a cerebral insult. Although the shock did not prove fatal and was without motor residuals (limb paralyses) the dementia which ensued was pronounced. Six months before death a second insult, followed by aphasic symptoms of a sensory type which, while not disappearing wholly, greatly improved. Three months before death a third insult with motor and sensory residuals. Death supervened three months later, suddenly, after a hospital residence of four years.

Anatomical Diagnosis.—Chronic leptomeningitis, advanced cerebral arteriosclerosis, cerebral atrophy, post apoplectic softenings and cyst-like lacunæ in cortex and basal ganglia; destruction of T[1] supervened, left, head of caudate nucleus and greater portion of putamen on left side, heterotropia of lumbar and thoracic cord; cardiac hypertrophy chronic endocarditis, chronic interstitial myocarditis; chronic interstitial nephritis.

Case XI.—W. S. H., No. 9252, a woman seventy-seven years of age, of whom it is said she had enjoyed good health up to two years ago. Her husband had died some years previously and she had been forced to work hard for support. Meanwhile, her remaining relatives, four sisters to whom she had been devoted, also died, which was the source of much grief, and she never seemed to quite reconcile herself to their death. At the age of seventy-five she was growing feeble physically and friends began to note that her memory was defective. Her chief interest seemed to be in the remote past, for she talked chiefly of associates long since dead. For several years she had been hard of hearing. As the memory defect progressed she frequently failed to recognize familiar faces. During the year prior to admission she was often restless and confused. She also showed a tendency to stray away and developed the idea that she possessed a sum of money in a certain bank—an institution with which formerly she carried an account. During this period, speech disorder of a sensory type developed, her restlessness increased and she became so noisy that it was no longer possible to care for her at the home for the aged, where she had been an inmate for about two years.

On admission, a fairly well nourished, but rather feeble old woman presented, who was also extremely restless and talkative, besides exhibiting a general tremor. Heart, lungs and other viscera offered no special pathological condition. Pupillary reaction sluggish; tendon reflexes normal.

Mentally, the patient seemed quite confused. Although talkative, the speech content was irrelevant. When addressed she did not answer questions, and it was difficult to determine whether the failure to react was due to deafness, inattention or to a sensory aphasia. A few days later she named several objects correctly. Usually, however, the speech content was absolutely irrelevant.

She suffered two attacks of catarrhal jaundice of a mild degree at an interval of a month between recovery from first and advent of second attack. Two months after admission, death from lobar pneumonia.

Anatomical Diagnosis.—Chronic external pachymeningitis, chronic

leptomeningitis, general cerebral atrophy, cerebral asymmetry due to pronounced atrophy of left temperosphenoidal lobe, dilatation of post-horn of lateral ventricle; chronic endocarditis, calcareous degen. of coronaries, peripheral arteriosclerosis; pleuritis, lobar pneumonia; hepatic congestion; chronic perisplenitis, splenic congestion; gastritis; chronic interstitial nephritis.

Case XII.—W. S. H., No. 9364, a woman seventy-nine years of age, mother of sixteen children, eleven of whom are living and well, had enjoyed good health, except for an attack of rheumatic fever at the age of forty, until five years ago when she met with an accident—she fell striking the head. As a result she was unconscious for some time (length of time not stated) and was later delirious. From the immediate effects of the injury she apparently recovered, but soon afterwards her memory failed perceptibly and grew steadily worse. She could not recall the names of life-long friends but apparently remembered their faces. She began to sleep poorly, was usually restless and roamed about the house at night in an aimless manner. She talked a great deal, but the speech content was rambling and often incoherent. Contrary to her former mood she was very irascible, she repeatedly threw objects at members of the family and on one occasion seized a knife with the intent to assault.

On admission, a fairly well nourished old woman, quite restless, talkative and negativistic, presented a right facial paralysis and arthritis deformans of both hands. On account of the extreme restlessness and senseless resistance, a physical examination was unsatisfactory, but a mitral murmur, increased and irregular heart's action were detected. Respiratory sounds not pathological; arcus senilis and peripheral arteriosclerosis. Pupils reacted to light and accommodation. Hearing was greatly impaired. Right knee jerk increased on right side. No Babinsky elicited.

Mentally, the patient appeared confused. Although she replied to questions, the speech content was seldom relevant. Despite the resistance, she was rather good-natured, laughing at the happenings about her. Later, the patient was restless and noisy and roamed about the ward, frequently disturbing other patients.

Ten days after admission very somnolent; inequality of pupils; twitchings of extremities of the left side; attacks of choking. Three weeks after admission, she died.

Anatomical Diagnosis.—Increased density of calvarium, congestion and increased tension of dura, chronic leptomeningitis, external hydrocephalus, cerebral atrophy, advanced cerebral arteriosclerosis, comparatively recent hæmorrhages in left putamen, antr. limb of right internal capsule and in antr. portion of corona radiata on right side; cardiac hypertrophy; chronic adhesive pleuritis, pulmonary hypostasis; fatty liver; diffuse nephritis.

Case XIII.—W. S. H., No. 8032, a woman eighty-seven years of age, had, until a year or more prior to admission, enjoyed good health, and was a self-reliant and ambitious person. Nevertheless, she was more or less difficult to "get on with" because of her inflexible opinions. Relatives, therefore, had kept little in touch with her, so there is no good account of the exact onset of the mental state. For more than a year she had been in poor health, and this together with financial losses and the recent death of an only daughter who had lived with her seemed to have been potent factors as exciting cause for the outbreak of the psychosis. She became extremely garrulous and forgetful and showed a slight tendency to romance. She claimed to be without food in the house when there were ample provisions, and she felt that she was being ill treated by a certain man who, on the contrary, was showing nothing but the greatest interest in her welfare.

On admission, a poorly nourished and feeble old woman exhibited an advanced state of peripheral arteriosclerosis. The heart's action was rapid and accentuated and there was a systolic murmur. Respiratory sounds were rather harsh. A urinalysis revealed a few hyaline casts and a small amount of sugar. Gait rather tottering; station unsteady. She did not coöperate in the neurological examination for the reason, as she stated, that she should not have been sent here. Hearing was greatly impaired; it was necessary to shout at the patient in order to be heard. Arcus senilis.

Mentally, the patient comprehended, when she could be made to hear, She was very noisy and was indignant to find herself in a hospital for the insane. She said she was deceived by those who brought her here. She was very prolix. No hallucinations.

The day following, she was quite exhilarated and attempted to give her fellow patients an exhibition of fancy dancing. Following the excitement she grew more reconciled to her stay. She remained in hospital two years and a half, exhibiting frequent alternations of periods of comparative comfort and cheerfulness and periods of slight depression and hypochondriasis together with pains in the gastric region. Death from perforating gastric ulcer.

Anatomical Diagnosis.—External pachymeningitis chronica, chronic leptomeningitis, advanced cerebral arteriosclerosis, atrophy of cerebral gyri; cardiac hypertrophy, aortic stenosis, chronic interstitial myocarditis; pleuritis, pulmonary congestion; acute perihepatitis, chronic interstitial hepatitis; acute perisplenitis, chronic interstitial splenitis; gastritis, perforating gastric ulcer, acute fulminating peritonitis; chronic interstitial nephritis; general peripheral arteriosclerosis.

Case XIV.—W. S. H., No. 7103, a woman eighty-four years of age, concerning whose previous history little is known except that for four or five years prior to admission she had been failing mentally. During the year before coming to hospital her memory was so defective that she did not recognize old acquaintances, nor could she recall the name of a sister when shown her portrait. She wandered aimlessly about the streets, bought food which she allowed to spoil before attempting to use it and in a confused manner poured kerosene on the floor and in the cook stove. She would dress only in her night garments in which she would leave the house, and she allowed herself to become very dirty, going, it was claimed, for more than a year without a bath.

On admission a very unkempt, feeble and restless old woman, whose clothes were filthy and in tatters, presented every evidence of the lack of care. The heart offered no lesions, but there was a general peripheral arteriosclerosis. Respirations were shallow and broncho-vesicular in character. Urinalysis showed the presence of hyaline casts. The left pupil reacted sluggishly to light, the right normal. Both pupils reacted to accommodation. Knee jerks not elicited. Romberg sign and a slightly ataxic gait were present.

Mentally, the patient was not oriented. She was excited, restless, resistive, and exhibited a marked impairment of memory for recent as well as remote events. It was doubtful whether or not the patient comprehended most of the questions asked her, whether this apparent lack of comprehension was due to impairment of hearing or to a sensory speech disturbance. She talked freely, but the speech content was often more irrelevant than not.

The patient was in hospital for four years and five months. At first she was more or less persistently noisy and restless, wandering about the ward in aimless manner and frequently disturbing other patients by pulling at their beds. This condition lasted for little more than a month. Later she was quiet and tractable, usually remaining seated wherever placed. She had to be dressed and undressed and cared for in every way. Her speech content degenerated into a mere jargon, and it was quite clear that conprehension was practically nil.

Anatomical Diagnosis.—Increased thickness and density of calvarium, ext. pachymeningitis, chronic hypertrophic leptomeningitis, ext. and internal hydroceph., cerebral atrophy particularly pronounced of tempero sphenoidal lobes and asymmetry due to the marked atrophy of left tempero sphenoidal, advanced cerebral arteriosclerosis; pleuritis, lobar pneumonia; chronic interstitial hepatitis; chronic interstitial splenitis; chronic interstitial nephritis with cystic degeneration.

Case XV.—W. S. H., No. 9378, a man fifty-six years of age had shown a memory defect for some time but was able to continue at his work as a laborer on a farm where he had worked many years. About ten days prior

to admission he suffered an attack of influenza with which marked mental symptoms were associated. He was very restless at night, roaming about the house, talking of his work and imagining he was doing it, going through certain movements employed in farming. Finally he began to destroy his clothing; he was disoriented and confused; apparently forgot the movements employed in dressing and feeding himself; lost control of bladder and rectal functions. Patient's mother died at the age of sixty-one from apoplexy.

On admission, a man in fairly well nourished condition, who looked considerably older than his stated age, presented in his person the appearance of neglect. His gait was wavering and unsteady, but not characteristic of anything more than general weakness. A systolic murmur, best heard at the apex, a full regular pulse and peripheral arteriosclerosis were present. Respirations were shallow and save over the superior lobe of right lung, broncho-vesicular in character. The pupils were slightly irregular in outline but equal, reacting sluggishly to light. No coöperation for accommodation. Patient did not coöperate in tests for hearing and for same reason test for smell, taste and touch were negative. There were no paralyses or contractures. Tendon reflexes increased.

On the day of admission he was very somnolent, and could be aroused only with difficulty. He was dull and apparently indifferent to his surroundings. His speech reactions were slow, data frequently incorrect, often a logoclonic repetition of the last syllable of a word and, with increasing fatigue, paraphasic. Some verbal amnesia was shown. He was disoriented, showed marked defect of memory and was entirely without grasp on his surroundings. The following day he was brighter mentally and for a while answered questions readily and in an orderly manner, although he was disoriented and memory defect was apparent. He fatigued easily, then the emissive quality of speech became thick and unintelligible and with it a paraphasia was associated. A week later he became very noisy and restless and was confused most of the time, remaining so until his death on the twelfth day after admission.

Anatomical Diagnosis.—External pachymeningitis, herniæ of Pacchionian granulations through dura, chronic hypertrophic leptomeningitis, atrophy of cerebral gyri, advanced cerebral arteriosclerosis; chronic endocardial thickening; bronchopneumonia; chronic perihepatitis; chronic perisplenitis.

Case XVI.—W. S. H., No. 9249, was a man sixty-seven years of age. When sixty-five he began to show a loss of memory up to which time his general health had been good. He had been temperate in his habits and industrious. For two years he was very forgetful, at times acting as though confused and was often incoherent in speech. During the two months prior to admission the mental changes were more rapid in progress; he was often untidy, noisy and restless, and had the idea that he was being pursued by some one who wished to harm him.

On admission, a fairly well developed old man who appeared anæmic, presented a rough, dry and scrawny appearance of the skin, a systolic murmur of the heart, general peripheral arteriosclerosis, and moist, diffuse râles over the lungs. Pupils reacted to light and accommodation; patient did not coöperate in tests for hearing, taste and tactile sense integrity. The gait was unsteady, trepidant; muscular development and tone good. No paralyses; no contractures, but a general tremor. Tendon reflexes elicited, were not pathological.

Mentally the patient was disoriented and apparently confused; at times he gave expression to fears saying that he was pursued, and in consequence was somewhat agitated. His speech content was prolix, often incoherent. The next day he fabricated experiences, was restless and talked as though replying to voices. He was in hospital four months and sixteen days, during which time he was often confused, talkative and untidy. A week before death a small abscess formed on the dorsum of the right foot, and about the same time a lobar pneumonia developed from which he died on the seventh day after its onset.

Anatomical Diagnosis.—Moderate cerebral atrophy, moderate cerebral arteriosclerosis; acute degeneration of myocardium; lobar pneumonia; hepatic congestion; splenic congestion; diffuse nephritis.

Analysis of Clinical Histories with Reference to Classification.

An analysis of the histories of these sixteen cases with reference to clinical classification and evaluation of the associated gross and histopathological lesions offers many difficulties. Although 62.5 per cent exhibited gross focal lesions of arteriosclerotic origin, these coarse brain lesions must be considered as incidental, in so far as direct relationship with plaques is concerned. In the succeeding group of cases which presented no plaques gross focal lesions of arteriosclerotic origin were even more pronounced. The great majority of the plaque cases on their clinical side and all, save one, from anatomical considerations, must be classed with the severer forms of senile dementia. If one takes the symptom-complex characteristic of presbyophrenia confabulation, marked impairment of memory, faulty reproduction, disturbance of judgment and mental confusion—then three of the cases, all other things considered, may be readily classed as presbyophrenia. Dupré and Charpentier[23] have maintained that the symptom of confabulation with the associated memory defect so prominent in presbyophrenia is to be interpreted as evidence of a polyneuritis, "affecting particularly the lower extremities, . . . an acute polyneuritis with Korshkow's syndrome later evolving into chronicity." Nouët,[24] and Nouët and Halberstadt[25] do not share this view. They call attention to points of similarity as well as to points of difference in the two affections, laying especial stress on age, sex, facial expression, garrulity, euphoria, mental confusion and amnesia. Disturbance of consciousness and amnesia, they claim, are more profound in presbyophrenia than in polyneuritic psychosis. In the cases considered as presbyophrenia in this series, alcoholism can be eliminated; but the possibility of a former neuritis, although no history of such was elicited, cannot be entirely excluded. Hammel[26] states that the presbyophrenic symptom-complex may apear as a transitory syndrome in the course of "simple senile dementia," a view which the writer's experience favors. Cases II, VI, X and XII, on the whole, presented clinically symptoms which best comport wth "simple senile dementia," although II and X showed at autopsy multiple gross focal lesions. Case VIII suffered repeated cerebral insults during a period of five years, motor residua and speech disturbance resulting. There had been transitory periods of confusion of which the patient was aware, but no considerable dementia, and throughout he possessed fair insight into his condition. He was of an apoplectic family, his father having died from cerebral insult. Ordinarily the case would be unhesitatingly classed as organic dementia of arteriosclerotic origin. And yet, if we are to consider plaques as evidence of senile dementia, or more properly speaking as an

index of senile involution, is this an instance of precocious senility? At any rate, the case falls short of a paradigm for "Alzheimer's disease." More nearly the type described by Alzheimer and Perusini is Case XV, a man who for some time previous had shown mental symptoms characterized chiefly by memory defect and a steadily progressive dementia. During an acute exacerbation, which supervened an attack of influenza, marked mental confusion, ideational apraxia and speech disturbance of a sensory character were present. At the autopsy the brain was within the range of so-called normal weight, but there was atrophy of convolutions and gaping sulci in frontal and left tempero-sphenoidal lobes, thickening and opacity of the pia over mesial surfaces of frontal lobes, frontal and parietal convexity and superior surface of cerebellum. The blood vessels were extremely tortuous and sclerotic, with numerous atheromatous patches which imparted a beaded effect. No gross lesions such as hæmorrhage, softening or lacunæ were found anywhere. Microscopically there was no evidence of Lissauer's paralysis, ordinary general paresis or the lesions of arterioslcerotic insanity made familiar by Alzheimer[27], Binswanger[28], Barrett[29] and others, but on every hand the general histological lesions such as characterize the severe forms of senile dementia were encountered.

Case III perhaps was always an abnormal person. During recovery from an attack of ptomaine poisoning a psychosis developed. The ptomaine poisoning and cardio-vascular disease from which he suffered must be considered as possible exciting cause for the psychosis; still the mental symptoms and anatomical findings bore something of the involution stamp. The mental symptoms in Case IV were of comparatively slow development, but certain rapidly developing sensory and motor symptoms immediately supervening a supposed "sun stroke," and in part persisting to the end, were not adequately accounted for in coarse focal lesions. Cases IX and XIV presented clinically marked intellectual deficit, confusion and symptoms of Wernicke's aphasia, and showed anatomically pronounced focalized atrophy of the left tempero-sphenoidal lobe in one case and both tempero-sphenoidal lobes in the other, atrophies which were not accounted for by previous hæmorrhage, tumor and the like. Both brains could be considered as examples of the "partial cerebral atrophy" to which Pick,[31] and Rosenfeld[32] have called attention in published cases.

Grouping the cases according to the scheme outlined by Wollenberg[33], who recognizes two chief groups of senile dementia, the first including cases with simple enfeeblement of intellect, the second, of which presbyophrenia is a sub-group, having delirium and hallucinations, all of the cases, then, with the exception of Case VIII would fall into the second category.

Since none of the sixteen brains were without evidence of arteriosclerosis and three were without the macroscopic signs of atrophy, the question of the relationship of atrophy to arteriosclerosis and the further question of the relationship of senile dementia to brain wasting arises.

Age Incidence.—The age incidence of the plaque cases by a decade is shown in the following table:

TABLE II

Decade.	No. of cases.
6th.	1
7th.	3
8th.	6
9th.	6
Total cases	16

VI. THE CASES WITHOUT PLAQUES AMONG ELDERLY SUBJECTS DYING INSANE.

Clinical Abstracts.

CASE XVII.—W. S. H., No. 9221, spinster, seventy-nine years of age, suffered a cerebral insult when sixty-one with resulting left hemiplegia. Since this time, at intervals of about two weeks, there had been periods of unconsciousness of from fifteen to thirty minutes duration. During the unconscious periods, stertorous breathing and muscular twitchings were present. At times the attacks were more in the nature of delirium—mental confusion and noisiness with considerable profanity. She slept little. Speech content was not aphasic in character, but she was prolix, often incoherent, and expressed delusions of ill-treatment on the part of relatives, who in reality were extremely devoted. During this time she complained of the sun shining on her constantly, and wished to be tucked firmly in bed for fear of falling out. Ever since the shock, however, there had been a feeling of insecurity against falls. Father of patient died of apoplexy at the age of sixty-one; five maternal cousins were insane.

On admission, ancient left hemiplegia with contractures; left facial paralysis; peripherial arteriosclersis; arcus seniles and total blindness, although patient insisted that she could see. When objects were placed before her to name she had to pass her hand over them first before she could tell what they were, but she usually named them correctly. The record of Dr. David W. Wells, patient's former oculist, for October 25, '99, reads: "cataract of anterior capsule in right eye, but can read medium sized type. Left eye examined under mydriasis, lens clear. March 6, '07, in right eye vision still .3 and with left eye was able to read nonpareil type. I doubt serious anatomical defect of left eye."

She comprehended well, but was talkative and noisy, and complained of abuse on the part of the hospital personnel. The tenth day after admission, patient was quiet and dull and had a temperature of 99.6 F. The next day considerable difficulty in swallowing developed, the face was flushed, she groaned frequently, and was aroused with difficulty. Death ensued.

Anatomical Diagnosis.—Increased density of calvarium, external chronic pachymeningitis, internal pachymeningitis hæmorrhagica interna (recent), chronic hypertrophic leptomeningitis, marked cerebral hemiatrophy as result of ancient destructive lesion of right insula, portions of putamen and globus pladius, anterior half of T^1, the supramarginal and angular gyri

atrophy of the right tegmentum, right half of pons, yellowish softenings of lobe involving calcarine region. Advanced cerebral arteriosclerosis, sclerosis of left cross pyramidal tract of cord; endocarditis, chronic interstitial myocarditis; pulmonary congestion, bronchitis; moderate interstitial hepatitis; chronic interstitial nephritis.

Case XVIII.—W. S. H., No. 8699, a man sixty-seven years of age, bookkeeper, a year previous to his admission to hospital had what is said to have been an apoplexy which, however, was without residuals in the way of paralyses—there was vomiting of a cerebral type, dizziness, double vision, unsteadiness on his feet and a somewhat staggering gait. Diplopia persisted for several weeks; the staggering gait did not improve. He lost his former interest in things and would talk but little on subjects which did not pertain to his condition. For a few months immediately preceding admission to hospital he became suspicious of persons who came to visit him, frequently asking callers if they thought he was improving, and any failure to reply promptly in the affirmative would be interpreted as a desire on the part of the visitors to find out all they could about his affairs. He would stop acquaintances, as well as strangers, on the street to ask if they thought he was improving. Frequently he remained quiet for a long period as though in deep thought, apparently oblivious to his surroundings. His memory for the little daily happenings was very defective but for remote events good. Two days before admission he was found during a heavy rain storm at the back door of a neighbor's house unable to give his name, address, or utter an intelligible sentence. When taken home he sat in a chair disinclined to move, was resistive, threatening in his attitude, apparently suspicious, swearing and calling to physician "get out," "ain't it a shame." Next day he was quiet and made no attempt to talk except when questioned and then his replies were paraphasic. Two brothers of patient were insane.

On admission, a fairly well nourished old man who looked his age. The first sound of the heart was accentuated, no murmurs, respiratory sounds were normal, double inguinal hernia, peripheral arteriosclerosis, arcus senilis. Pupils unequal, right larger, both reacting sluggishly to light and accommodation. Swaying to Romberg; gait somewhat staggering and trepidant. K. J. plus on both sides; Oppenheim and Babinsky phenomena elicited. Hearing good. Integrity of taste sense could not be determined, likewise ability for fine tactile discrimination. The aphasia which presented rendered judgment of mental state difficult, but patient appeared at times confused, at other times good natured. The aphasia was of the sensory type, for sometimes there was almost a logorrhœa, although paraphasic in character (verbal and literal) and frequently there was a verbal amnesia. He recognized objects placed before him and indicated their uses, although he seldom named them correctly. When fresh the word sense of simple language (*notion du mot*) was fair, but the patient fatigued easily and then it was bad. Somatic orientation was very imperfect even when the patient was fresh. There was agraphia for dictation as well as for copy, and alexia. *Reihen Sprechen,* even for numerals was very poor. Perseveration was marked. Although movements of the upper extremities were carried out somewhat clumsily there was no motor apraxia in the sense of Liepmann. At times he was very conscious of his defects which disturbed him exceedingly, and was greatly pleased with his successes, but the quickness with which he fatigued always rendered aphasic examinations unsatisfactory. The patient was in hospital a year and grew worse constantly, the speech content degenerating into jargon and incoherent paraphasic attempts at expression.

Anatomical Diagnosis.—Increased density of calvarium, chronic external pachymeningitis, internal pachymeningitis hæmorrhagica, chronic leptomeningitis, cerebral atrophy, advanced cerebral arteriosclerosis, focal destruction by hæmorrhage (ancient) of left supramarginal gyrus, small old hæmorrhage in inferior portion of foot of post. central gyrus, granular ependymitis, chronic endocarditis, aortitis, brown atrophy of heart; chronic interstitial hepatitis; chronic interstitial nephritis; enlarged prostate.

Case XIX.—W. S. H., No. 7900, a man sixty-seven years of age, a broker, began to show mental symptoms when sixty-three. He returned from a successful business trip to a neighboring state, where he had gone a few days before, apparently very tired. He went to bed and is said to have slept for almost two days, after which he appeared quite dull. He however continued for a time his usual work, but seemed to take no interest in it. This was in June, 1907. Despite his lack of interest he continued at work until the autumn, when he took a trip with his family to the Pacific coast. While in the west he spent a great deal of money recklessly, and had numerous wild schemes for going into business. At this time his mood alternated between periods of dullness and periods of excitement in which latter he was talkative and irritable, at times threatening the lives of members of his family. He also entertained vague fears of impending catastrophe to some one of his family, particularly his son. Since the episode in June, 1907, there had gradually developed a speech defect, first noted in an inability to recall many words employed in ordinary conversation and by the time of admission to hospital a year later, he was markedly aphasic (paraphasia, verbal and literal, literal agraphia, inability to comprehend complex sentences of ordinary conversation, alexia, though not complete, inability to repeat from memory, etc.). Contrary to his former habit he became very slovenly in his personal appearance, ate his meals in a disgusting manner, used his boots for a urinal, threw lighted matches about the house after lighting his pipe and committed other acts of a similar nature which made it unsafe and impracticable to care for him at home. The patient had always used alcohol (daily), though, it was claimed, not excessively; otherwise his habits were good and he had been a hard worker. An aunt of the patient was insane.

On admission, a small but fairly nourished man who looked older than his reported age, somewhat untidy in appearance, with a general expression of good nature, presented a right facial paralysis, a more or less fine general tremor and exhibited a peripheral arteriosclerosis. There was an enlargement of the area of cardiac dulness, accentuation of the second sound of heart; but no murmurs. Urinalysis revealed a chronic interstitial nephritis; other trunk organs without special interest. The pupils were contracted, reacted to accommodation, the right very sluggishly to light, the left stiff. Station and gait good; deviation of tongue to left; tendon reflexes active; no Babinsky.

Mentally the patient appeared confused; he was restless and wandered about the ward in an aimless manner. His speech affection rendered difficult a good mental examination.

The patient was in hospital two years and six months. He made no improvement, suffered two cerebral insults in the course of his hospital residence. Speech utterances degenerated into jargonic paraphasia, there was entire loss of the word sense with complete agraphia and alexia, inability to name objects and recognize their uses and to repeat words after examiner.

Anatomical Diagnosis.—Increased density of calvarium, congestion of dura, chronic leptomeningitis, advanced cerebral arteriosclerosis, cerebral hemiatrophy (slight), old lacuna involving putamen anteriorly, internal capsule external capsule and some of the fibres of the insular, together with numerous small lacunæ and small old hæmorrhagic areas in white substance and basal ganglia on both sides; chronic endocarditis, aortitis, degeneration of myocardium; chronic interstitial hepatitis; chronic interstitial splenitis; chronic interstitial nephritis.

Case XX.—W. S. H., No. 8287, a nurse sixty-one years of age, enjoyed good health until about two years ago. About this time she had a fall in a street of the shopping district of Boston, the result of tripping against a curb stone. The day following, there was a bloody discharge from the left ear and blood streaked expectoration. She was ill for a few days as the result of the fall, but the illness was without serious consequence for she was able to continue nursing. Eight months later she undertook the care of an hysterical patient, a friend of hers, continuing the case until the death of her patient a year later. She felt keenly her friend's death and began to worry quite a little. Two weeks after her friend's death she began to

have attacks of dizziness, her feet felt as though they were getting smaller, and two months later a numbness in the right half of the face developed, and in the corresponding half of the tongue there was a sensation as though the member had been seared with a hot iron. When she brushed her teeth they felt like a board. She drooled, occasionally bit the inside of her cheek without knowing it, and vomited a great deal. About this time she complained much of failing vision and visited several oculists for treatment. A month later she began to have considerable difficulty in walking; she was frequently forced to support herself against the walls of the room or pieces of furniture to prevent falling. Everything in the room seemed to be going round, consequently her gait was staggering in character. The condition grew worse, so it was necessary to take to bed. Two months later, it was noticed by friends that she fed herself in an awkward manner. She developed delusions that the food was "doped" and she was greatly depressed over her health. A month later she became delirious and excited, and a speech defect developed which from the description obtained must have been a temporary verbal amnesia. No history of mental disease in the family, but the mother of patient was a nervous woman who worried over trifles. The patient herself was active and industrious but given to the formation of pretentious plans which she never carried out.

On admission, a feeble, poorly nourished old woman presented, unable to walk without support. The heart's action was rapid, no murmurs, blood pressure 144 mm Hg, peripheral arteriosclerosis, chronic gastritis and a rectal prolapse presented. The pupils were equal and reacted to light and accommodation, and there was clouding of both crystaline lenses. The protruded tongue deviated sharply to the left and the right half was anæsthetic. The upper and lower extremities could be moved freely, although with the right hand finer movements were awkwardly executed. There was no difference in the hand grasps; both good. The patient could not walk unsupported on account of vertigo, all attempts to do so resulted in staggering and falling to the right. Tendon reflexes were active. Marked Romberg; no Babinsky; no Oppenheim. Speech utterances were slow, indistinct and thick in character. She comprehended all that was said to her and her replies to questions were relevant.

Mentally she was depressed over her condition, was generally nervous and admitted that she worried. Five days after admission, considerable moaning and groaning and projectile vomiting. A month later loss of rectal and bladder control, persistent nausea and vomiting. She was confused and often incoherent. When clear, a marked memory defect was shown. Four months after admission, cerebellar attitude—she lay in bed with head extended and there was a degree of opisthotonous. The head was turned to the right and attempts at flexion or turning in the opposite direction caused great pain. Horizontal nystagmus and considerable somnolency were present. Memory defect increased. She frequently said to nurse or physician, "I can see only half of you." The cerebellar attitude became more pronounced, the patient grew worse, finally dying after a hospital residence of three months.

Anatomical Diagnosis.—Increased density of clavarium, congestion of dura, chronic leptomeningitis, atrophy and flattening of cerebral gyri, atrophy and marked softening of right cerebellar hemisphere as the result of hæmorrhage, congestion of cord, osteomata of spinal pia; chronic endocarditis; pleuritis, broncho-pneumonia; congestion and fatty infiltration of liver; splenic congestion; gastro-enteritis; moderate interstitial nephritis; moderate interstitial pancreatitis; senile involution of reproductive organs.

Case XXI.—W. S. H., No. 6589, a man seventy-one years of age, who although always of a nervous and excitable temperament, had enjoyed reasonably good health until the age of sixty-three. At this age he had what was described by friends as an attack of "nervous prostration," following a long period of hard work and some worry over his affairs. He did not improve but grew worse from year to year. Formerly a man neat in his personal appearance, of good habits and circumspect in morals, he became careless in dress, extremely untidy in his habits and morally unendurable.

He annoyed people by long calls at their houses or business places, engaging them, particularly the women, in interminable conversation. He would stop women, entire strangers, on the street, inquire as to the number of their children, put his hands on them, remark on their physical development and offer indecent proposals. The same he did to girls as young as twelve years. Frequently he went about the house nude and would make his appearance in this manner when visitors were present. He was often irascible, destroying furniture and lighting fixtures whenever he felt they were in his way. On two occasions he had handled his wife violently, and kept a piece of iron pipe in his bedroom to defend himself against burglars and other intruders. He would sleep on the floor instead of on a bed, and order the light on the piazza to be kept burning all night "to light the weary traveler on his way" when there was a street lamp opposite his house. He insisted on undressing his wife at night and anointing her with crude petroleum, etc., and maintained that his near neighbor was the vice-president of the United States. He was improvident with money, often throwing pennies away, yet complaining that relatives were not aiding him with funds to supply his needs. At rare intervals he was quite rational and orderly. He was often untidy about the house, using the kitchen sink as a urinal, etc. His mother was considered an eccentric, a sister likewise. A nephew is an epileptic.

On admission, a well developed, well nourished old man who looked older than his reported age, presented a marked senile trepidant abasia, peripheral arteriosclerosis, increased heart's action and a chronic interstitial nephritis as shown by urinalysis. Vision was defective, opacity of both lenses, pupillary reaction sluggish to light and accommodation. Hearing defective, most marked in left ear. Smell, taste and tactile sensations were apparently unimpaired. Tendon reflexes active; no Babinsky.

Mentally the patient was oriented, memory for important events in his life. No insight, saw no good reason for sending him to hospital, but thought he knew who was responsible. He comprehended what was said to him, talked freely but was very prolix. He cried easily without apparent good cause and his general mental attitude was very childish. Later he showed a tendency to disturb the ward by loud talking during the night. He had several dizzy attacks accompanied by nausea, but these were never associated with loss of consciousness. He wrote many incoherent letters and frequently had attacks of unprovoked laughter or crying. Eleven months after admission, while on his feet one day he suddenly became dizzy and unsteady. He called out for assistance saying he did not dare to move, following which he was much confused. He would frequently leave his bed to wander about the ward in an aimless manner. After this attack memory deteriorated rapidly, particularly for recent events. There were frequent periods of untidiness. He failed gradually but constantly, finally dying twenty months after admission to hospital.

Anatomical Diagnosis.—Thickened calvarium, adherent dura, congestion of meninges, general pial opacity, congestion of brain, atrophy of cerebral and cerebellar convolutions, arteriosclerosis of cerebral vessels; congestion and atrophy of spinal cord; thickening of mitral cusps, interstitial myocarditis, atheroma of aorta and coronaries; hypostatic congestion of lungs; congestion and interstitial splenitis; chronic interstitial nephritis; gastritis; decubitus of buttocks, trochanters and left interior malleolus; diverticula of bladder.

Case XXII.—W. S. H., No. 8516, a woman, widowed, formerly a nurse, is said to have enjoyed good health until the age of seventy-five. At this time she began to show decided memory defect, general fussiness and physical feebleness which precluded earning a livelihood by her own efforts as formerly. Without means and owing to increasing physical and mental feebleness, she had been supported for more than a year from certain charitable funds. In the year prior to admission memory defect had grown very pronounced; there were periods of confusion and she had shown a tendency to stray away. Once she left her boarding house and was gone over night

and when returned the next day, after having been picked up on the street, her head was cut and bruised. She could give no account of the injury. She shifted her boarding house several times, finding it difficult to get on with landladies. While at her last boarding place she imagined that the young men lodging in the house were in love with her and on one occasion attempted to get in bed with one of them who had treated her kindly and befriended her in many little ways. Family history as obtained is meagre and unimportant.

On admission a feeble old woman presented. She was poorly nourished, exhibiting marked peripheral arteriosclerosis, a deformity of the left wrist (improperly united fracture), numerous cloasmæ on face and hands, senile trepidant abasia, general senile tremor, a systolic cardiac murmur, defective sight and hearing, and impairment of the sense of smell. The pupils reacted promptly to light and accommodation; arcus senilis; tendon reflexes active.

Mentally she presented a good-natured indifference to her surroundings, was faultily oriented, and had defective memory for important events, remote and recent. She immediately adapted herself to ward surroundings and except for occasional untidiness and a general senile fussiness was quiet and gave no trouble.

Patient was in hospital for a year, during which time she suffered several attacks of diarrhœa which weakened her. All the while she grew more childish, and memory defect increased. Finally difficulty in swallowing developed during an attack of broncho-pneumonia. Temperature rose to 105° F., the heart's action gradually weakened. Death.

Anatomical Diagnosis.—Increased density of calvarium, pachymeningitis externa, leptomeningitis chronica, cerebral atrophy and asymetry of moderate degree, advanced cerebral arteriosclerosis; endocarditis, aortitis; pleuritis, pulmonary congestion, broncho-pneumonia; hepatic congestion; splenic congestion; focal congestion of gut; chronic interstitial nephritis, uterine fibroma.

Multiple old lacunæ (int. cap. left) and basal gang. corona.

Case XXIII.—W. S. H., No. 8306, a woman seventy-three years of age, began to have attacks of dizziness at the age of seventy-one which increased in frequency. Her memory for the two years preceding admission to hospital was decidedly defective, especially for recent happenings. She had often appeared depressed and suffered considerably from insomnia. She gave as a reason why she could not sleep that the parties held at the house late into the night (hallucinations) had kept her awake. She was depressed because of the recently acquired intemperate habits of her son (delusion). She was occasionally confused and talkative, the speech content rambling and incoherent.

On admission an emaciated feeble old woman, who looked older than her reported age, presenting general coarse tremors, marked peripheral arteriosclerosis, rapid and irregular heart's action. The pupils were dilated and reacted promptly. The hearing was greatly impaired. Knee jerks were active, other tendon reflexes sluggish, gait unsteady and extremely trepidant.

Mentally the patient was disoriented, showed a marked memory defect for recent happenings was without insight, and claimed that people had intentionally annoyed her. She seemed surprised when told that the hospital was an institution for the care of the insane, replying "I must leave immediately, I am not insane. How could my nephew do this? I have done so much for him," emotionally disturbed meanwhile. She admitted auditory hallucinations.

A month later loss of bladder and rectal control and increased memory defect. Although claiming to have been abused by the hospital personnel there was for the most part a good-natured indifference to her surroundings. Two months after admission (during summer) diarrhœa with great prostration; recovery. Eleven days later sudden development of difficulty deglutition, weak heart's action; death.

Anatomical Diagnosis.—Chronic leptomeningitis, atrophy of cerebral

gyri, cerebral arteriosclerosis; moderate cardiac atrophy, atheromatous thickening of endocardium; pleuritis, hypostasis; Glissonitis; moderate interstitial splenitis; moderate interstitial change of kidneys, extensive decubitus over sacrum and buttocks.

Case XXIV.—W. S. H., No. 8751, a man seventy-five years of age concerning whose previous history nothing is known, died after three days in hospital.

On admission, an emaciated, very feeble old man unable to walk (weakness) presented extensive trophic skin lesions over the right deltoid, lower portion of back and gluteal region. The heart's action was weak, arythmic, sounds muffled. Fair pulmonary resonance, but râles were present. Pupils reacted to light; patient did not coöperate in accommodation tests. Opacity of crystaline lenses; arcus senilis. All tendon reflexes weak; no Babinsky.

Mentally the patient presented alternating periods of confusion and clearness. He was disoriented and memory was very defective, a condition into which the patient had some insight for he often made excuses for his poor memory on the ground of age. He slept a great deal and when awake paid practically no attention to his surroundings. When admitted there was a diarrhœa which persisted to the end.

Anatomical Diagnosis.—Increased density of calvarium, external pachymeningitis, hydrocephalus interna et externa, cerebral arteriosclerosis, multiple old punctate hæmorrhagic areas in head of caudate nucleus and pons, moderate cerebral atrophy; parenchymatous degeneration of myocardium, peripheral arteriosclerosis; chronic pleuritis; gastritis, enterocolitis; chronic interstitial nephritis with cystic degeneration of kidneys, multiple and extensive trophic lesions of skin.

Case XXV.—W. S. H., No. 8589, a man, retired farmer, eighty-five years of age had enjoyed general good health until about his eightieth year. He had given up active work and was beginning to be feeble, his sight was poor and memory defect was noted, all of which have increased in the intervening years. Although he had shown a tendency to stray away, and at times mixed his ideas when talking, for the most part he had been dull and quiet, sleeping a great deal. During the year prior to admission to hospital restless periods had been more frequent and he had to be constantly watched that no harm should come to him.

On admission, a feeble old man who looked his age, presented perpheral arteriosclerosis, arcus senilis, a slightly accentuated second sound of the heart and slight dullness over the apex of the left lung. Vision (presbyopia) and hearing were impaired. There was a general senile tremor and the gait was markedly trepidant. The tendon reflexes were elicited with difficulty.

Mentally the patient appeared confused. He was disoriented, cried when talking of his family and showed a marked memory defect for the grossest events, remote as well as recent. His attention was difficult to hold. The speech content was prolix and often incoherent. He was quite indifferent to his surroundings and when told he was in hospital remarked it might do him good to remain here "for a little toning up."

Patient was in hospital a little more than three months, confined to bed all the while on account of general feebleness, showing throughout pronounced memory defect, finally dying from an intercurrent lobar pneumonia.

Anatomical Diagnosis.—Increased density of calvarium, adherent dura, pachymeningitis hæmorrhagica interna, leptomeningitis chronica, atrophy of cerebral gyri, cerebral arteriosclerosis; degen, of myocardium (acute myocarditis), endocarditis; chronic perihepatitis, hepatic congestion, fatty infiltration; right lobar pneumonia and exudative pleurisy; colitis; interstitial pancreatitis with cystic degen. of gland; chronic interstitial nephritis; scalp wound of right occipital region.

Case XXVI.—W. S. H., No. 5486, a woman, widow, seventy-eight years of age, admitted to this hospital when sixty-two where she had been ever since. She was always a peculiar character—self willed, lacking in persistive power, odd—but save for an occasional attack of tonsillitis, last one eight years before admission, and a fall from a street car four years previous,

slight injuries resulting, she had suffered no serious illness for more than thirty years. Although a good seamstress she was seldom employed at the same place twice on account of her oddities, so for many years up to two years preceding her admission she had practiced as a professional medium. For several years it had been noticed by friends that she related imagined experiences as facts, and this aside from her mediumistic practices. Where she lodged the landlady had noticed that she frequently acted very queerly, and on one occasion about two years prior to admission she went to her sister's home late at night, claiming to have heard the sister calling for her. During the three weeks before coming to hospital she had been far more talkative than usual, mostly about happenings of many years ago and about almost every one she ever knew.

A paternal uncle was insane. No other family history of importance elicited.

On admission, she was well preserved for her age and was in good physical condition. Mentally she was somewhat excited, exhibiting periods of apparent confusion. In the clear periods she resented being brought to hospital, spoke in flowery language and was inclined to be dramatic. Memory for recent events was poor. Later she gave evidence of auditory hallucinations, was irritable, made many complaints and developed ideas of personal importance, claiming that she was Queen of England, etc. She soon, however, adjusted herself to hospital regulations and was helpful in the sewing room. Three years later she was less exhilarated and more inclined to depression. With the years she was contented at the hospital and quite indifferent. She remained in apparent good physical condition for about seven years when one day she announced to her hospital friends that she did not expect to live much longer, at the same time writing her will. She became irritable and markedly depressed. Examination revealed a grayish cauliflower-like growth involving vulva and anus which was beginning to break down. The growth progressed rapidly and broke down (carcinoma). Death supervened a month later.

Anatomica Diagnosis.—Increased density of calvarium, oedema of pia, atrophy of cerebral gyri, moderate hemiatrophy of cerebrum, advanced cerebral arteriosclerosis; thickening of mitral and aortic cusps, atheromatous degen. of endothelium in ascending aorta; chronic adhesive pleuritis; fatty infiltration of liver and congestion; splenic congestion; cystic degeneration and anæmic infarcts of kidneys; introitus vaginæ, labia majora et minora seat of carcinoma.

Case XXVII.—W. S. H., No. 7099, a man seventy years of age, never a healthy person, for twenty years prior to admission had been constantly under the care of physicians and had done no work. He had complained of dyspepsia and general weakness. He had always been contrary, irritable and impulsive and bore a reputation for oddness. When sixty-six years of age, his family began to notice that his memory was poor and that he was becoming childish. About two months before admission he had gone to the country and while there became quite restless and was frequently excited. While in the train returning to his city home he had what was described by friends as a "slight shock,"—projectile vomiting and a marked but suddenly developing mental confusion, during which he talked a great deal in an incoherent manner. Following this episode and up to the time of his admission, he showed considerable restlessness, was often confused, and lost himself easily in formerly familiar surroundings.

On admission there was distinct evidence of peripheral arteriosclerosis, arcus senilis, cardiac hypertrophy, increased and irregular heart's action and a chronic interstitial nephritis as revealed by urinalysis. The pupils reacted promptly to light and accommodation tests. Hearing was impaired, most marked in left ear.

Mentally the patient was confused and restless; comprehension poor. He laughed when asked questions.

The following day he gave with fair accuracy, the data for his chart. He talked freely of places in Boston with which he was familiar, claiming to be in business there (romance). Remote events were described in detail,

but for recent events he admitted a poor memory. "There has been some indefinite depression which I could not outgrow," he said.

Soon after, and throughout, there were alternating periods of confusion and periods with a fair degree of mental clearness. All the while memory defect for remote and recent events was progressive and he grew more childish in his manner, giving utterance to many hypochondriacal complaints and was occasionally untidy, finally dying suddenly a little more than three years after admission.

Anatomical Diagnosis.—Cerebral congestion, chronic leptomeningitis, atrophy of cerebral gyri, granular ependymitis, cerebral arteriosclerosis, cardiac hypertrophy, endocarditis, thrombus of pulmonary artery; interstitial hepatitis; splenic congestion; gastritis; interstitial nephritis, cystitis, prostatic hypertrophy.

Case XXVIII.—W. S. H., No. 8931, a man seventy years of age, formerly a farmer, always of a retiring disposition suspicious of the motives of others, egotistic and overbearing, nevertheless of poor judgment, began to have difficulty with his hearing twelve years ago, in consequence of which he became more and more isolated. For quite a long period (several years) he had heard noises in his head but these were correctly interpreted as the result of his ear disease. Of late, however, these noises had been falsely construed. During the ten years prior to admission patient is said to have had several "mild shocks," but data concerning these are indefinite. Four years ago he met with an injury to his right hand, resulting in the loss of four fingers. The mental and physical shock from the injury was great and ever since there had been progressive mental and physical failure. Of late, he had been actively hallucinated (auditory) and was much disturbed in consequence, alarming the neighborhood with appeals to be saved from murder. He had shown a tendency to stray away, collect useless articles and in a confused manner would burn old newspapers indoors to drive away evil spirits. He had lost all sense of modesty.

On admission, a well-developed old man, seventy years of age, somewhat obese, tidy in appearance, but rather decrepit. There is a deformity of the right hand as the result of a loss of four fingers. He walks in a halting, trepidant manner and is slightly ataxic. There is a left facial paralysis with ptosis of the left eyelid. The pupils are contracted, equal, sluggish to light and do not react to accommodation tests. The tongue when protruded shows a coarse tremor and deviates to the left. Deafness is marked, apparently complete in the left ear and with the right ear the patient can hear only the shouted voice. Respirations are shallow, heart sounds faint but rhythmic and of normal frequency. No cardiac murmurs. Right K.J. active, left absent, Babinsky and Openheim phenomena present on right side, plantar reflex on left side normal. Coördination tests poorly executed. A history of syphilitic infection fifteen years previous was elicited.

Mentally there appeared to be considerable dulling and marked emotional instability—crying without any adequate external cause. The speech was slow, thick and at times quite indistinct. The patient was entirely without insight into his condition; he thought he was being persecuted by his brother, and the reasons given for this belief were quite puerile if not silly. While he was at first quiet, there soon developed nocturnal restlessness and a disposition to become noisy. Eight days after admission he suddenly became unable to rise from a chair in which he was sitting. There was no loss of consciousness but his increasing feebleness made it necessary to confine him to his bed. Three weeks after admission a facial erisypelas developed which was followed, two days later, by a broncho-pneumonia from which he died ten days after onset of latter, a month and six days after admission to hospital.

Anatomical Diagnosis.—Increased density of calvarium, external pachymeningitis, focal proliferative pachymeningitis, chronic leptomeningitis, atrophy of cerebral gyri; endocarditis; pleuritis, broncho-pneumonia; hepatic congestion; splenic congestion, perisplenitis, interstitial splenitis; interstitial nephritis; deformity of left hand.

(Focal luetic changes.)

Case XXIX.—W. S. H., No. 8646, a spinster, sixty-six years of age, suffered an attack of insanity at the age of forty-seven which lasted for seven years. Recovery with defect. All her life she had been more or less eccentric and had masturbated persistently. Mother of patient and maternal grand parents died of cardiovascular disease, one relative was intemperate, another epileptic.

The salient clinical features on admission were peripheral arteriosclerosis, tachycardia, goitre, chronic proliferate arthritis of fingers and knees, high arched palate, exaggerated deep reflexes, slight Romberg, general senile tremor, senile trepidant abasia and moderate spinal curvature (kyphosis).

Mentally there were mild depressions, a tendency to assume affected attitudes, expression of indefinite fears and numerous hypochondriacal symptoms; good orientation and retention of school knowledge and a fair memory. The patient easily adjusted herself to hospital surroundings. After two and a half months in hospital, periods of confusion, restlessness and loss of bladder and rectal control appeared. Three months later cerebral insult during the night. When seen next morning she was confused, heart's action weak and she groaned a great deal. She could not talk but when aroused seemed to comprehend. Slight improvement followed, but speech content was limited to "yes" and "no," "well, I want to." Aphasic protocols made, showed that there was good comprehension of spoken language; she recognized and indicated the uses of objects shown, pointed them out when requested and could do the same for colors. She could write neither from copy nor dictation. She fatigued easily and frequently became confused during examination. Following the slight improvement after the insult there was gradual but persistent failure. Death seventeen days later from an intercurrent lobar pneumonia.

Anatomical Diagnosis.—Congestion of dura, chronic leptomeningitis, frontal lobe atrophies, advanced cerebral arteriosclerosis, cerebral myelomylacia, multiple coarse brain lesions in left cerebrum and pons; chronic endocarditis, degeneration of myocardium; lobar pneumonia; hepatic congestion and chronic interstitial splenitis; multiple infarcts of kidneys; small sub-serous uterine fibromata.

Case XXX.—W. S. H., No. 8759, a man sixty-two years of age, suffered a cerebral insult at fifty-two, prior to which he had enjoyed good health. There was apparently good recovery. Six years later he had a second "shock" and since had never been well, physical and mental failure had been marked. His memory became impaired, he was often irritable, restless and had alternating periods of excitement when he was violent and threatening, and periods of dullness during which he sat quietly staring vacantly into space. He had been hallucinated (visual) and contrary to former habits, became slovenly in person and untidy.

On admission, a fairly well nourished man, who looked older than his reported age, presented peripheral arteriosclerosis, increased heart's action and a trepidant abasia. The pupils were unequal and reacted promptly to light and accommodation tests. The tongue deviated to the right. Right K. J. increased; right ankle clonus. Other tendon reflexes elicited. No Babinski; no Oppenheim. General tremor of head; choreic movements of the neck; Romberg sign.

Mentally the patient was disoriented, showed a memory defective for the grossest events, remote and recent. He cried when speaking of his family, and his enunciation at times was very defective, but he seemed to comprehend when addressed; there were also short periods of confusion. He later showed some restlessness, frequently fabricated experiences, showed poor rentention and was often untidy. On account of feebleness he was in bed all the while, apparently fairly contented with his surroundings. Death after a hospital residence of three months and two weeks.

Anatomical Diagnosis.—Pachymeningitis hæmorrhagic interna, leptomeningitis chronica, atrophy of cerebral gyri, cerebral arteriosclerosis, multiple softenings and old apoplexies; cardiac hypertrophy, aortitis; pleuritis, broncho-pneumonia; hepatic congestion and hypertrophy; gastric ulcer; interstitial nephritis.

Case XXXI.—W. S. H., No. 2829, a woman sixty years of age had a history of epileptic attacks since her fifteenth year. At twenty-eight, insane and had been ever since. In hospital since 1894, at which time she was very noisy, threatening and gave evidence of visual and auditory hallucinations. During her hospital residence frequent *grand mal* attacks, as many as forty-seven during a single month are recorded. Repeated attacks of excitement following a series of convulsions; a marked dementia during the five years preceding death. Following a severe epileptic seizure four years before death, development of an umbilical hernia. Death twelve years after admission from a strangulation of hernia noted above. During the last year she never attempted to walk on acount of a marked unsteadiness and a gait which was staggering in character. Dementia had been marked.

Anatomical Diagnosis.—Cerebral congestion and arteriosclerosis; cardiac hypertrophy; pulmonary congestion and pleuritis; moderate interstitial hepatitis; splenic congestion; strangulated hernia; interstitial nephritis; cystic degeneration of right ovary, uterine fibroma.

Case XXXII.—W. S. H., No. 6851, a woman eighty-five years of age, when eighty was bitten by a mad dog, up to which time she had enjoyed good health. After the accident with the dog she was ill in bed for two weeks, but no evidence was elicited in the history suggestive of rabies, but since that time she had failed physically and mentally. On an average of about once a month during the two years prior to her admission to the hospital she had been excited and delirious; her memory was poor; she was frequently untidy; and had showed a tendency to roam around aimlessly. A year prior to admission she suddenly lost the use of both lower extremities and of her left hand, (apoplexy), but this was not permanent for on admission she could walk. Six months later aphasic disturbances set in and for the six weeks prior to admission she had been unable to utter an intelligible sentence.

On admission a rather small, very untidy and neglected old woman, who, when assisted, walked in a very trepidant manner, the gait shuffling in character and wide-spread. Heart's action weak and rapid, bronchitis, and evidence of chronic interstitial nephritis. General peripheral arteriosclerosis. Both pupils contracted and reacted sluggishly to light, the patient not coöperating for accommodation tests. Tests for hearing, unsatisfactory, although patient appeared to hear. Tendon reflexes elicited, the knee jerks increased. Left-sided Babinski.

Mentally the patient was dull and frequently appeared confused. She seemed to understand simple questions addressed to her, but all attempts to reply resulted in an unintelligible paraphasia or in jargon, a condition which did not improve at any time during her hospital residence. On account of her inability to get about well she was kept in bed, although she frequently left bed to roam about the ward in a confused and aimless manner; she never seemed able to find her bed having once left it. Later she was unable, because of increasing feebleness, even to get out of bed, and periods of confusion were more frequent. In the clearer priods she seemed to understand simple conversation addressed to her and appeared greatly pleased when the physician stopped to talk to her. A suppurating gland of the neck developed two months prior to death which never healed, and two weeks later gangrene of the left foot. While she was in hospital she emaciated considerably, finally dying after hospital residence of three years and three months.

Anatomical Diagnosis.—Increased density of calvarium, congestion of dura, chronic hypertrophic leptomeningitis, atrophy of cerebral gyri and cerebellar foliæ, general congestion of brain, advanced arteriosclerosis of cerebral vessels; cardiac atrophy (?); anthracosis, atelectasis, pleuritis, moderate pulmonary congestion; moderate interstitial nephritis, senile atrophy of the reproductive organs; small wound of neck. (Multiple old hæmorrhagic softening of basal ganglia, both sides and in white substance.)

Case XXXIII.—W. S. H., No. 5203, a woman eighty-five years of age developed the symptoms of Paget's disease (osteitis deformans) twenty-nine

years ago. A short while before the onset of the bone disease she had accidentally fallen through a trap door into the cellar. There was no history of fracture following the fall, but since that time she had never been quite well. Prior to the fall, save for inordinate modesty and a tendency to profuse sweating about the head, she was considered a normal person. Soon after the accident, she began to complain of pain in the back and knees. So severe was the pain that she could not take even a short walk without becoming prostrated. This, however, did not last long, for the pains became less severe, finally disappearing. After this her legs began to curve outward, her hips had the appearance of spreading and there was a curvature of the upper portion of the back (kyphosis cervico dorsalis). There was an interval of ten years before the sister, who gave the information, again saw the patient. At this time the increase in the size of her head was striking and it was noted that she was much shorter in stature than formerly. In the meanwhile the thyroid gland had enlarged and there was considerable difficulty in breathing after the slightest exertion—going up stairs, taking a short walk, etc. She was very weak and it did not seem as though she would live long. Not long after this there was a severe illness during which there was free watery (?) discharge from mouth and throat. Her head, however, was no smaller after recovery from this illness, which from its general character was considered an attack of influenza. After recovery from the grippe she began to do and say queer things, continually growing worse during a period of nine months. In this time she was often confused, noisy, hallucinated and complained of paresthesias—worms crawling over the body, etc.

On admission, a rather feeble old woman, presented an enlarged head with triangular shaped face, base upward, enlargement of thyroid, particularly right lobe, cervico-dorsal kyphosis, a broad pelvis, lower extremities curved outward and forward. Heart's action was rapid and weak, pupils dilated and sluggish. Patient did not coöperate in other tests. The voice was peculiarly rasping in character, hoarse and rattling. She was noisy, her speech content was often incoherent, and she thought the food and drink given her were full of worms. In hospital eight years, in bed most of the time, untidy, noisy when anyone was near, thought she was being denied the comforts due her and was occasionally restless, getting in and out of bed. A year before death she had a fainting spell during which the heart beat was scarcely audible, but recovered her usual condition in a few days. A year later, during an attack of bronchitis she suddenly collapsed, dying ten minutes later.

Anatomical Diagnosis.—Osteitis deformans of calvarium (Paget's disease), cerebral atrophy, cerebral arteriosclerosis; chronic endocarditis of mitral and aortic valves; broncho-pneumonia; hypertophy and calcareous degeneration of thyroid; chronic interstitial nephritis; osteitis deformans of spinal column and femurs.

Analysis of Clinical Abstracts of Non-plaque Cases with Reference to Classification.

A survey of the cases without plaques from elderly persons dying insane shows that a large percentage (seven cases) falls readily into the clinical group of arteriosclerotic insanity. Two cases (XXVI and XXVII) may have been originally dementia præcox upon which arteriosclerotic changes were later superimposed, one without and the other with coarse focal lesions. Cases XXIII and XXV, even XXII, despite the multiple gross focal lesions, might be considered senile dementia and while not wholly "simple senile dementia" nor cases of presbyophrenia, fit in Wollenberg's second category.[33] Case XXXII offered difficul-

ties in classification. Sensory and motor symptoms were accounted for in coarse brain lesions of arteriosclerotic origin. Mental failure, however, did not set in until the eightieth year; even then psychical shock played no inconsiderable rôle. Case XXXI was an epileptic with history of seizures during a period of fifty-four years. In the hippocampal region histological lesions were plentiful. Striking features were great numbers of amyloid bodies (as many as seventy in a single oil immersion field) varying from the size of a red blood cell to a large lymphocyte of the blood stream, and colonies of large fibre-forming glia cells. Occasionally an amyloid body would present a fibril or fibrils wrapped around it in much the same way one would wind a string loosely around a spool, in quite the same manner as pictured and described by Alzheimer[5]. A single amyloid body, or a group of them, showed not infrequently an encapsulation with small glia cells and numerous fine glia fibres. The amyloid bodies were confined to the first and second cortical laminæ, mostly to the first. While no plaques in the sense of the structures described in a subsequent section were found, the similarity of the reactive gliosis and the position of corpora amylacea, always as it seems in dilated meshes of the glia reticulum, suggest an analogous origin for both processes.

One case, XVII, clinically and anatomically post apoplectic dementia, presented, on microscopical examination, in the gray and white substance at the periphery of a large recent softening of the left occipital lobe, numerous large cells of a phagocytic character (*Abraumzellen* of the Germans). These cells were free in the tissue, and the adventitia and perivascular lymph spaces of blood vessels in the vicinity were crowded with them. The cells without the vessels were often grouped in colonies and many gave the impression of having coalesced (Fig. 13). These groups of phagocytic cells do not appear at all comparable to the plaques dealt with in this paper. Bickel,[20] however, has described a like condition as a variety of plaque. In this case they were interpreted as the usual reaction following any acute destruction of nervous elements.

Age Incidence.—The age incidence of this group of cases is shown in the following table:

TABLE III.

Decade.	No. of cases.
7th.	7
8th.	7
9th.	3
Total cases	17

VII. Material from Elderly Subjects without Psychosis.

Six cases constitute this group, but one of them dying at the age of fifty-four cannot be considered, in a strict sense, as a case of senility. The case was added for the reason that in the autopsy protocol "cerebral sclerosis" had been noted. The remaining five cases were eighty, seventy-eight, seventy-five, seventy-two and sixty-eight years of age respectively at the time of death.

Case XXXIV, a man, eighty, without psychosis, showed at autopsy pulmonary tuberculosis, chronic appendicitis, hydrocele and marked œdema of the brain. Small pieces of brain fixed in formalin were available from the following areas: a six-layer type of cortex—probably frontal—antr. central cortex. corpus striatum and hippocampal gyrus.

In sections from all of the blocks of tissue, plaques were found in goodly number, but most numerous in sections from the hippocampal region (Fig. 3). Alzheimer's intracellular degeneration of neurofibrils was seen in some cells of the large pyramidal layer of Ammon's horn, missed in the other regions studied. The general histological changes of this case, so far as demonstrable in Bielschowsky sections and by Herxheimer's scarlet method for fat, were essentially those as appeared in cases of senile dementia reported in this paper.

Cases XXXV, XXXVI, XXXVII, XXXVIII, XXXIX, at autopsy, gave evidence of cerebral arteriosclerotic disease—atrophies, hæmorrhages, multiple focal softenings and the like.

In none of the portions of brains available from these cases were plaques found. The histological changes were more of the character of some of the cases with purely arteriosclerotic alterations.

Case XXXIV of this series, the case of Oppenheim, and cases reported by Simchowicz indicate clearly that plaques may be present without psychosis; and, if the thirty-one-year-old tabetic of Alzheimer be excepted, may be considered as evidence of senile involution. In the same manner that general histological changes of senile dementia are intensified over those of senile involution, so are plaques, as a rule, more numerous in senile dementia than in simple normal senile involution.

VIII. Results of Examination of Material of Fifty Younger Subjects Dying of Various Mental Diseases.

In this supplementary group there were twenty-seven cases of general paresis, four of manic-depressive insanity, including a case of involution melancholia, three of cerebral lues, one of micro-

cephalic idiocy, two of tuberculous meningitis, one of purulent menigitis (streptococcus infection from middle ear) in a katatonic dementia præcox thirty-five years of age, two of brain tumor, one of psychosis associated with anæmia and multiple degenerations of spinal cord, five of chronic alcoholism, four of dementia præcox and one of marked cerebral arteriosclerosis in a woman fifty years of age with a bad alcoholic history, dying of extensive hæmorrhage into the left lenticular nucleus. In addition to the above, a manic-depressive sixty years of age, two general paretics, one sixty-eight, the other sixty-five, and a woman seventy-six years of age who had been continuously in hospital over forty years, were examined.

None of the cases in this group exhibited plaques. In the arteriosclerotic woman dying from hæmorrhage and in one of the luetic cases (thirty-one years of age) with multiple gumma, large fibre-forming glia cells and groups of macrophages laden with lipoid stuff were encountered at the periphery of gummata in the latter case, and about a small softening in the former case. These cell colonies, however, were not the plaques with which we are concerned in this paper.

IX. The Plaques.

Methods Employed.—Bielschowsky's silver impregnation method, Mann's eosin-methylene blue mixture, acid fuchsin-light green, Mallory's phosphomolybdic hæmatoxylin—the three last as employed by Alzheimer—Weigert's glia and myeline sheath stain, Mallory's glia stain, scarlet after Herxheimer, van Gieson's stain after alcohol and bichromatic fixation, Haidenhain's hæmatoxylin and toluidin blue after alcohol and on frozen sections, were the technical methods employed in the microscopical examination of the cases. The silver stain of Bielschowsky, Mann's stain, fuchsin-light green, Weigert's glia method—when successful—and scarlet on fresh material, proved the most instructive for study of the plaques. No case which failed to show plaques by Bielschowsky method revealed these structures by the other methods employed.

Microscopic Appearance of Plaques.—The general morphology of the plaques in silver impregnated sections and in sections stained with Mann's solution is characteristic. The other methods exhibit certain details with less uniformity. The plaques may be described as discrete structures of variable size in which a dark, circular, homogeneous, nuclear-like mass is centrally disposed. Surrounding the dark, homogeneous portion is an area of variable extent, always larger and lighter than the nuclear portion and darker than the adjacent brain tissue. (*Kern* and *Hof* respectively of Alzheimer[5]). In the outer portion of the plaque (court), glia and nervous elements and other not definitely determined

structure—fibrils, granules and globules—are found. Under low magnifications (Fig. 1, 2, 3), even with the oil immersion (Fig. 4, 5, 6), the plaques are usually circular. Other shapes—square (Fig. 7, 8), triangular (Fig. 9) and irregular forms (Fig. 17)—are encountered. Certain reactions of the glia in and about the plaques serve to differentiate what appear to be young forms from old ones. The glia constituents and the elements of nervous origin which one finds within the plaque exhibit not only progressive but regressive changes as well. The tinctorial nuances shown by the not clearly determined substances of the outer portion indicate that these may be of different chemical composition, probably stages in elimination of the products of degenerated nervous structures. While the homogeneous nuclear portion is usually roughly circular in outline, higher magnifications reveal a jagged periphery which frequently imparts the appearance of the many-pointed star of an official seal. This is usually well shown with Mann's stain and often in silver preparations and fuchsin-light green sections. A well defined nuclear mass, by these methods, does not reveal any cellular contents. Nevertheless, plaques, such as Fig 6, showed occasionally a group of nuclei at the centre, in the position usually occupied by the homogeneous mass. Between these nuclei were clear spaces. Such microscopical pictures were interpreted as encapsulating glia cells about a nuclear mass not in the plane of the section. Plaques without a homogeneous nuclear-like mass are not rare and for the same reason, as pointed out by Alzheimer. An unquestionable attempt at glia encapsulation is often well brought out even in Bielschowsky silver preparations. Alzheimer[8] has published a convincing illustration of glia encapsulation of the nucleus shown in a section stained after the Weigert method. Fig. 6 is a photomicrograph of a plaque displayed in a silver impregnated section from Case X. Large fibre-forming glia cells are seen at the periphery sending fibrils which may be traced, on the one hand, as far as the nuclear mass and on the other hand—in at least one instance—to a nearby blood vessel. In the cases of this series, the glia cells in and about the plaques, although showing at times a rich fibrillosis, were more frequently of the type of gliogenous phagocytic cells. (*Gliogene Abraumzellen,* Alzheimer, Merzbacher *et al*). Gliogenous phagocytic cells in frozen sections treated with Herxheimer's stain for lipoid substances, also with Mann's stain and fuchsin-light green after Flemming's fixation, are frequently met with. So-called amœboid glia cells are also displayed in frozen sections stained with Mallory's phosphomolybdic acid hæmatoxylin. In two cases of the series (XII, XV) Herxheimer's stain displayed a fine bright red stippling of the nuclear portion of the plaque which was not encountered in any of the other cases.

A somewhat distinctive type of plaque (Fig. 10) is best shown in silver impregnated sections. Here it will be seen, relatively coarse, tortuous curled and club-shaped fibres dominate the picture. Other fine fibrils of about the calibre of neurofibrils, are encountered. These fine fibrils and by far the great majority of the coarse fibrils were not stained by any of the methods which display glia fibres. The fibres, as can be seen from the photomicrograph, are disposed in a radiary manner. The whole plaque presents much the appearance of the ray fungus of actinomycosis to which it has been likened by several observers (Achúcarro[34] *et al.*). The whole process, as shown in Fig. 10, presents many points in common with regeneration of nervous elements in the cerebro-spinal axis such as is described by Bielschowsky, Pfeifer, Marinesco and others. Methods which display axis cylinders reveal these fibrils, although it must be admitted in a way which suggests that the supposed axis cylinders are undergoing a degenerative process. In Weigert myeline sheath preparations myelinated axis cylinders are occasionally seen within the plaque.

If we turn to Figs. 5 and 9, Mann's solution and fuchsin-light green stains respectively, many more or less discrete or confluent globular masses are shown in the body of the plaque between which clear spaces suggestive of channels are seen. Whether or not these spaces are channels for the passage of fluid stuffs from the nucleus to the periphery of the plaque, or in the opposite direction, or whether they represent a purely artificial fissuring resulting from the technic employed, is not clear. These fissures have been found alike in sections cut free after fixation in Weigert's glia mordant and in most carefully embedded material after the same fixative, subsequently stained with Mann's solution. The plaques in sections treated with Mann's solution, except where glial and vascular elements obtrude, are stained blue, the nuclear body a dark blue, the surrounding globules varying shades of a lighter blue. The globules shown in Fig. 9, for the most part, are stained in varying nuances of red; sometimes one or more globules take on both the red and green elements of the stain and are then a muddy blue color. A semblance of the original glia reticulum is occasionally shown in fuchsin-light green specimens (Fig. 9) within which these globules seem to lie. With both stains, as shown in Figs. 6 and 9, discrete globules may be seen and larger masses which appear to have been brought about by a coalescence of smaller globules. Further, there are globules which appear to be the result of thickening of trabeculæ in the diffuse glia mesh.

Some plaques (Figs. 7, 8, 10) show a thickening of fibrils about the periphery. Some of these fibres are evidently glia, as shown by various stains, and others appear to be axis cylinders.

But the great majority of plaques (Fig. 4) were without evidence of thickening or proliferation of fibrils about their periphery.

Topographic and Stratigraphic Distribution of Plaques.—Plaques when present are usually widely distributed throughout the cerebrum. Areas of predilection, independent of general pathological alterations, are not the rule, at least not in this series. Case IX, however, exhibited plaques only in the left prefrontal and left hippocampal regions. The left prefrontal and left hippocampal in this case had nothing in the way of general gross alterations or even histopathological changes, save plaques, to distinguish them from the corresponding regions of the right side. But in general it may be said, the frontal lobes and the hippocampal regions display the greatest richness in plaques. Precisely these are the regions which show generally the most advanced and most extensive histological lesions in the brains of aged persons, whether dying insane or not. Cases IX, XIV, XV, exhibited in T1 and transverse gyri of Heschl, a richness of plaques equal to that found in any prefrontal region of the entire series. Here, however, their number is commensurate with the general pathological lesions found in this area (see clinical analysis pp. 501- 502). In general the occipital cortex shows the fewest plaques, but one case (V) presented in the occipital cortex almost if not quite as many plaques as were shown in its prefrontal regions. In this series, plaques have been found in the basal ganglia, white substance of the cerebrum and in the brain stem. In the cerebellum no typical plaques were found, but in Cases XIII and XV in areas of the molecular layer, dark and light staining, large as well as small corpora amylacea were seen in some foliæ, missed in others. Around these corpora there was occasionally a proliferation of glia fibres such as seen about numerous corpora amylacea in the hippocampal region of Case XXXI. No plaques have been found in the spinal cord, although cords were not available for all the cases. Finally, the portion of convolutions forming the lips of sulci show more plaques as a rule than the summit area.

As regards the stratigraphic distribution of plaques in the cerebral cortex considerably variability was shown. No cortical layer appears immune as a possible site for plaques. In a section where plaques are not numerous they are most generally confined to the layers of small and medium sized pyramidals. In other instances, especially where clinical symptoms and general pathological changes were severe, an unbroken array of plaques extending from just beneath the pia, throughout all the cortical laminæ, deep into the white substance, could be demonstrated (Fig. 2). In the hippocampal region, an area often equally rich as the frontal for its content of plaques, the greatest involvement is usually

found in the layer of large pyramidal cells, but numerous plaques in all layers of this region are common (Fig. 3). Here, too, the largest plaques are most generally found. (Compare Figs. 2 and 3, which are photographs of the same magnification, one representing the prefrontal region, the other the hippocampal).

In the white substance of convolutions, plaques, when present, are most numerous just beneath the cortex. Nevertheless, in the very centre of the marrow stalk of many gyri a goodly number have been frequently found.

Relation of Plaques to Glia and Nervous Elements and to the Vascular Apparatus.—The presence of glial elements in and about the plaques has been noted by practically all observers who have studied these miliary areas, but the interpretations of these glial elements have varied. From the studies of Held,[36] Alzheimer[35] and others, we have learned that the glia is more than a support structure for the mesoblastic and nobler epiblastic elements of the central nervous system and a replacement tissue in case of destruction of nervous elements; that an important group of glia cells do not proliferate fibres; that proliferated glia fibres are not necessarily emancipated, as was formerly supposed; that appreciable cellular glial proliferation may take place in advance of demonstrable alterations in the morphology of nervous elements; and that the glia possesses scavenger functions which, perhaps, are as important as any other function of this many sided tissue. In and about the plaques almost every known characteristic of the glia is demonstrable. While some of the glia phenomena may quite safely be looked upon as secondary reactions to the plaques— as, for example, attempts at encapsulation by means of a rich fibrilosis— others are not so easily explained. Whether or not we can consider the plaques as originally groups of glia cells—secondary to some stimulus and yet primary in so far as plaque morphology is concerned—undergoing regressive changes into which nervous elements proliferate and later degenerate, is not clear. In any case, the problem as to the original stimulus which gave rise to the primary glial proliferation, whether originating from nervous elements or inherent in the glia itself, must be faced, even though a definite solution may not be reached.

Alzheimer[9] early maintained that certain glial proliferations surrounding corpora amylacea and other bodies were identical with the miliary sclerosis described by Redlich. Recently[5] he has argued a similiar origin for plaques and amyloid bodies. But the views concerning the origin of amyloid bodies differ, falling readily into two classes: those which contend for an origin from regressive alterations in nervous elements and those which assign their origin to degenerated glia cells. As early as 1857 Rokitansky[37] main-

tained that these structures had their origin in regressive metamorphosis of myelin elements. Rindfleisch[38], in a series of observations, published in 1863, stated that some of the small uninuclear cells between the fibres (presumably glia fibres) undergo an amyloid degeneration and concluded that the familar corpora amylacea had their origin in this manner. Fromman,[39] in 1867, also advocated a glial origin.

Turning to more recent contributions which deal with the origin of amyloid bodies, we have on the one hand Ceci[40] (1881), Schaffer[41] (1890), Holschwenikoff[42] (1890), Siegert[43] (1892), Stroebe[44] (1894), Catola and Achúcarro[45] (1906), Nager[46] (1906) and Wolf[47] (1907), maintaining an origin from degenerating myelin sheaths, axis cylinders, and products of degeneration of nervous elements and the like. In short an origin from nervous elements. On the other hand, Redlich[48] (1892), Obersteiner[49] (1900), Nambu[50] (1907) and Hamilton[51] (1910), are convinced of the glial origin of corpora amylacea. It has been pointed out that amyloid bodies are genrally found within the meshes of the glia reticulum. Quite generally, when not encapsulated by actively proliferating fibre-forming glia cells, amyloid bodies in the central nervous system are surrounded by a mass of glia fibres which, while variable in extent, do not seem to be due to a crowding of the trabeculæ of the diffuse glia net but are apparently the result of a true fibrillosis. This is especially well shown even in Nambu's Fig. 1. The fibrillary glia wrapping about amyloid bodies, recorded in Case XXXI of this series (p. 515), and the amyloid bodies in the molecular layer of the cerebellar cortex of Cases XIII and XV with their surrounding glia elements, show much in the way of glia reactions that are found in and about the plaques.

That actual proliferation of axis cylinders may take place in the portion of the plaque peripheral to the nuclear-like body, is demonstrated in many sections from the cases of this series. The proliferated nervous elements do not appear to differ essentially from the proliferation of axis cylinders in glioma, focal compression of spinal cord (Bielschowsky[52]), injuries (Pfeifer[53]) and experimental lesions (Marinesco[54], and Marinesco and Minea[55]). These proliferations of axis cylinders the writer is inclined to consider as ineffectual attempts at replacement.

With regard to plaques and ganglion cells, the examination of the cases here reported furnishes no good reason for supposing an origin from degenerated ganglion cells. True, ganglion cells at the periphery of plaques or even well within plaques are not rare findings. The great majority of plaques, however, do not show any especial affiliation with ganglion cells. It is also true that in not a few instances where ganglion cells are seen at the periphery or

within the plaques such cells exhibit a fair state of preservation. Perhaps the best argument which may be used against a ganglion cell origin is the frequent appearance of a great number of plaques in the molecular layer and white substance of the cerebrum and this too without the slightest evidence of a heterotropia of the stratigraphy of ganglion cells.

Several observers have called attention to the not infrequent proximity of plaques to small blood vessels and the similarity, it not identity, of many granules found in plaques to granules found in the walls of the vascular apparatus under conditions of active destruction of nervous elements. In the sixteen cases exhibiting plaques, while proximity to blood vessels was not rare—instances of which may be seen in Figs. 7 and 8—the great majority of plaques were distributed without any such reference.

Association of Plaques with Alzheimer's Intracellular Degeneration of Neurofibrils.—In the study here reported, the type of intracellular degeneration of neurofibrils to which Alzheimer was the first to call attention, has been found in some of the severe cases of senile dementia, in some comparatively mild cases, in the case of precocious senile dementia (type of Alzheimer and Perusini) and in the case of an elderly man dying without psychosis. The number of cells exhibiting this type of neurofibril degeneration was variable, some of the cases showing only a few such cells, while in others, particularly in the frontal regions, by far the great majority of cells were so affected. In some sections it was difficult to find a ganglion cell which did not show the alteration. The small and medium size pyramidal cells furnished the largest number of examplars, next to these the cells of the fusiform layer. In 3 Cases (XII, XIII, XV), particularly in the frontal regions but also in regions of marked atrophy, all of the cortical laminæ were affected to the same extent. In another group of three cases such cells were found only in sections from the cornu Ammonis. Indication of this type of degeneration is also seen in sections treated by other methods which do not ordinarily display neurofibrils. In sections from corresponding areas treated after the Nisal method, the evidence of marked cell degenerations is seen. (Fig. 16.) The distribution and intensity of ganglion cells affected with Alzheimer's degeneration corresponds on the whole with the distribution and intensity of general gross and histopathological lesions. Well developed Alzheimer's degeneration of neurofibrils was found only in brains showing plaques. One of the cases discussed under section VIII, a manic-depressive fifty-five years of age, exhibited many cells of the character shown in the drawing Fig. 12. Such cells were also found in cases in which many cells exhibited a well marked Alzheimer's degeneration and are interpreted as possibly

an early stage in the process which leads to the peculiar whorl-like and snarled arrangement in the typical late stage. Nothing quite comparable was shown in the supplementary material, nor in the brains of the seventeen elderly subjects dying insane but without plaques. A translation of Alzheimer's description of the order of changes in the intracellular neurofibrils which lead up to the peculiar alterations has been given above (p. 484), to which the writer can add nothing essential. The photographs (Fig. 11) of the extreme manner in which some cells may be affected are more eloquent than a verbal description. Nine of the plaque cases exhibited this type of ganglion cell degeneration.

Attention would also be called to certain alterations found in ganglion cells, generally among the large pyramidals of Ammon's horn, rarely in other portions of the cerebrum (frontal region), which Simchowicz describes under the name of Argentophile bodies. These structures are small, homogeneous masses, usually circular and surrounded by clear spaces. The Argentophile bodies are smaller than glia nuclei and more numerous in cells from which neurofibrils seem to have disappeared. (Fig. 15). The impression is won that, perhaps, here we have to deal with coagulative residue of neurofibrils, in a certain sense a process comparable to that which leads to the formation of Alzheimer's degeneration. Large Argentophile bodies, such as described by Alzheimer in a case of circumscribed senile atrophy, were not found in this series, not even in the case in which there were areas of marked focal atrophy.

X. Senile Dementia.

Campbell[56] in 1894, although not the first to call attention to certain characteristic changes in the ganglion cells in cases of senile dementia, wrote: "The most striking and constant change of senile insanity, however, is pigmentary or fuscous degeneration, which affects all nerve cells of any size; some large pyramidal cells and ganglial cells of the paracentral cortex may be seen wherein the change has advanced so far that the protoplasm is almost entirely replaced by pigment." Hodge[57], about the same time, in a communication on senile changes of ganglion cells in man and the honey-bee, while not insisting "that nerve tissue is of any more importance in relation to physiological dying than any other tissue," contended that the ganglion cell changes found in senium are to be interpreted as normal physiological changes, the counterpart of which may be seen in the parenchymatous cells of other organs undergoing involution. In so far as offering an explanaton for the cerebral histology of senile dementia, Hodge's viewpoint, while having won staunch adherents, has not received universal recognition. Robertson,[58] Carrier,[59] Alzheimer,[9] Frankhauser[60] and quite

recently Simchowicz[4], can see in the histological picture presented by brains of persons dying from uncomplicated senile dementia nothing but an intensification of the histophysiological alterations of normal senium. Simerling,[61] Appledorn,[62] Fischer,[14] Léri[12, 63] *et al*, and in a certain sense Southard[64], too, conceive special pathological factors in addition to the normal alterations of senium, although the conception of these pathological factors are not definitely formulated.

In the earlier fatigue experiments of Hodge,[65, 66, 67, 68, 69] and the more recent experiments conducted by Dolley[70] ganglion cell alterations, comparable to changes encountered in ganglion cells of persons dying of senile dementia, were produced in normal adult and young animals. In the one case, these alterations may be looked upon as the expression of cell exhaustion experimentally accomplished in short time; in the other, on account of their general character, no less a process of cell exhaustion produced by factors in operation over a long period. Whether the typical picture of the ganglion cells in senile dementia, or, for that matter, the psychosis itself is the result of chronic intoxication—a view to which Léri[63] inclines—or whether these cell changes are representative simply of a physiological apparatus worn out by long continued use, seem of secondary importance; for very likely beyond these lie other factors more fundamental and of greater moment.

Southard[64] and Léri[63] have urged particularly that one must always distinguish the clinical and anatomical changes of senium from changes which are only coincident with senium. This point the writer believes is well taken; for all too frequent mental conditions and anatomical findings which have little or nothing to do with senile dementia are classed among the distinguishing features of the psychosis.

The gross brain anatomy usually found associated with senile dementia is too familiar to be recounted, but a word should be said of the commonly associated atrophy and arteriosclerosis to which great etiological significance has been generally ascribed. As in the Danvers State Hospital cases recently reported by Southard,[64] so in the thirty-three elderly subjects dying insane recorded in this paper, not one was without macroscopic evidence of arteriosclerosis. But the degree of associated atrophy was not always commensurate with the degree of arteriosclerosis, nor even when reversely stated was a definite relationship established. These findings, then, are also consonant with those of McGaffin[71] in his recent study of the Taunton State Hospital material.

To determine the existence or non-existence of atrophy from the accepted normal average brain weights is far from satisfactory for the reason of wide variations within the normal. The estima-

tion of atrophy from the macroscopic appearance of the brain is also susceptible to error, for, as pointed out by Reichardt[72], von Torok,[73] Rosanoff and Wisemann,[74] and others, skull capacity must be taken into consideration in deciding for or against the existence of brain wasting. Until comparatively recently no attempts have been made to estimate skull capacity in relation to brain weights, and such methods as have been suggested are tentative at best.

Attention has been called (p. 488) to the existence in this series of so-called normal-weight brains with manifest atrophy and gross focal lesions. One brain below the accepted standard for normal weight exhibited only a minimum of gross vascular change which could have been attributed to arteriosclerosis (p. 490).

Southard[64] asks the very pertinent question: "Granting that physiological brain atrophy occurs, how can we distinguish pathological atrophy therefrom?" He then proceeds to answer: "First, the loss in weight is more marked in the latter. Secondly, the onset of the process may be premature. Thirdly, the progress of the atrophy, as distinguished by clinical observation, may be much more rapid. Fourthly, a group of cases will show differential loss in brain weight, whereas the other organs will maintain weight better." Southard does not contend against "general nutritive conditions, in part arteriosclerotic in origin," as etiological factors in senile dementia, but argues that local vascular changes as producers of atrophy have not been proven. He thinks that "senile atrophic changes in general" are "similar to those unknown conditions which underlie thymus atrophy or menopause changes. One gathers from Bolton's[75] [76] researches that he conceives for many forms of insanity an arrested development of certain cortical layers which may explain in part the generally low brain weights in persons dying insane. In Bolton's senile dementia cases, however, there were reported instances in which brains weighed well within the accepted normal range. In the series of cases here reported much smaller to be sure than Bolton's (the latter's included 1000 cases of various forms of insanity), " the relationship of the degree of wasting to the degree of dementia" was not always, or even commonly, "very exact." Finally, concerning atrophy, attention would be called to the studies of Donaldson[77] who, nevertheless, emphasizes the danger of applying conclusions drawn from laboratory experiments on lower animals, where conditions may be controlled, to man, where conditions are almost never controllable. To quote Donaldson: "The brain, like other organs, has much water in it. I have followed in the rat the change in the percentage of this water from birth to maturity. It diminishes by approximately ten points and this diminution is very closely correlated with age. At birth the water forms about 88 per cent. of the

brain, and at maturity, about 78 per cent. . . . For the percentage of water in the human brain, the data are meagre, but so far as we can gather them, they correspond to those for the rat, and when adjusted for the rapidity of growth, the curve for man fits that for the rat. A very striking coincidence."

Concerning the vascular changes, Friedmann[78] differentiates the physiological vascular alterations of senium from the pathological vascular alterations by atrophy of the muscular coats in the former and proliferation of the connective tissue fibres in the latter.

It would follow, at least in part, from the cited observations and the observations recorded in this paper, that atrophy and arteriosclerosis in senile dementia rather than being dependent the one upon the other are often merely coincident, but it is conceivable that the latter under certain conditions—disturbance of the nutritive supply, etc.—may hasten or increase the former.

The microscopical findings in the brains of the thirty-three elderly subjects of this series are on the whole sufficiently distinctive to separate the cases into two chief groups, and this not alone by the presence or absence of plaques, but by the sum of their histological alterations which show certain differences of a qualitative character.

The histological changes of the sixteen plaque cases will be briefly considered in the order of pia, vascular, glial and ganglion cell alterations:

The pia in all of the plaque cases save one, Case II, exhibited proliferative alterations, more marked in some of the cases than in others, most pronounced over the frontal convexity, the upper half of the central convexity, over the larger sulci—particularly the Sylvian—and over the superior surface of the cerebellum. The pial hyperplasia consists in a proliferation of its most external cells (endothelial layer), a great increase in number and thickness of connective tissue fibres and the fibroblasts which give rise to such fibres. The fibroblasts frequently exhibit regressive alterations. These proliferated elements of the pia produce a thickening of the membrane of from four to eight, or even more times, the normal thickness of this structure. Between the proliferated fibres large heavily laden pigmented cells of the same general character as the macrophages (*Koernchen Zellen*) of the cortex are found, their number usually proportionate to the number of such cells found in the walls of the cortical vascular apparatus. The content of these cells is shown, by suitable dyes, to be chiefly so-called lipoid substances. Extracellular lipoid granules are also encountered free in the pial mesh. Here and there, in sections of the pia, lymphoid cells are occasionally seen but never in great number, and in some

of the cases a few mast cells are observed. None of the cases exhibited plasma cells. The "osteoid plates" described by Robertson are not rare findings, but these precursors of the commonly occuring spinal osteomata are, however, far less numerous in the cerebral distribution of the membrane than in the spinal pia. The blood vessels of the pia present much the same condition as will be described for the vessels of the brain.

The vascular alterations are regressive as well as progressive, on the whole, the former predominating. In alcohol fixed material stained with toludin blue or with Nissl's methylene blue-soap solution, the endothelial cells of large and small vessels exhibit frequently a darkly staining and rather elongated nucleus. More frequently than not the protoplasm of endothelial cells is tinged, exhibiting also lipoid granules. With Herxheimer's fat stain the lipoid content of endothelial cells is well displayed. Swelling and splitting of the elastica are frequently very pronounced in the larger vessels. The cells of the muscularis generally show a rich fatty content and markedly degenerated elements are common among them. The adventitial cells are frequently proliferated, but the most striking feature of these cells is their rich lipoid content. Here, too, one finds frequently free lipoid granules and richly pigmented macrophages, such as described for pia. The connective tissue fibres in some of the cases, usually in the older subjects, were markedly proliferated, in small as well as in large vessels. So marked was the fibrous proliferation of the vessel wall in such instances that the process could worthily be designated as an "arteriofibrosis." (Fig. 14.) The arteriofibrosis was best displayed in Bielschowsky silver impregnated sections and in sections treated with Mann's eosin-methylene blue solution. These proliferated fibres are arranged either in a thick annular manner or in a series of spirals which give a latticed appearance. Three of the non-plaque cases also presented a rather marked arterio-fibrosis, but these were among the oldest subjects of the group which aside from plaques had much in common, histologically, with the plaque cases as a whole. Hyaline degeneration of the wall of small vessels is occasionally encountered but less frequently than in the seven more typically arteriosclerotic cases of the non-plaque group. Depending upon the degree of cortical disturbance and upon the acute, subacute, or chronic character of these disturbances, great numbers of heavily pigmented macrophages are seen in the adventitia and perivascular lymph spaces.

The glia changes are also progressive and regressive in character, the former, perhaps, predominating. These changes affect the cellular as well as the fibrillary glia. Colonies of small fibre-forming glia cells and colonies of giant glia cells are encountered

in the cortex. The glia "keel" of the molecular layer is of greater extent than normal and in many instances equal in extent to the glia proliferation found in this region in cases of general paresis. The calibre of the proliferated glia fibres, however, is more delicate than the proliferated fibres of general paresis. Many of the glia cells, not only those in the vicinity of degenerating ganglion cells, show a rich pigment content of their protoplasm, fuscous stuff of apparently the same character as that seen in ganglion cells. In cells of the spider type yellow pigment (toludin blue, stained red with Herxheimer's scarlet stain) deposited in fine granules is often seen. Where a process is given off from such a cell to a nearby blood vessel, the impression is imparted that in this manner a part at least of the products of pathological metabolism find their way to the blood stream for elimination. A noticeable feature of these sixteen cases was the comparatively insignificant satellitosis. Where ganglion cells are the most degenerated, as for example those cells showing an advanced stage of the Alzheimer intracellular degeneration of neurofibrils, satellites are either entirely absent or at most exhibit in their vicinity only a few such cells, and this regardless of the cortical laminæ in which such cells are found. Aside from the types of glia cells already mentioned, amœboid glia cells (Alzheimer), gliogenous phagocytic cells and a few rod cells (*Stäbchen Zellen*) of glial origin are encountered.

The most striking characteristics of the ganglion cells are atrophy, tortuous dendrites which in Nissl preparations may be followed for a considerable distance from the cell, and marked yellow pigmentation. The pigmentation is not confined to the base of the cell but generally deposited throughout the cell and may be followed in the apical dendrite as far as this process is visible. The intense lipoid pigmentation is best seen in frozen sections stained with scarlet after Herxheimer. Some of the cells are mere shadows, some are encrusted, others present large vacuoles. In addition to these chronic nerve cell changes acute changes are often superimposed. The neurofibril changes, on the whole, are such as previously described by Bielschowsky and Brodmann,[79] the writer[80] and others, nine of the cases exhibiting the Alzheimer type of degeneration. While there is usually no marked disturbance in cell lamination, as in general paresis, there are instances of considerable diminution in the number of cells present. Where Alzheimer degeneration is advanced indications of cell devastation, although not *en bloc*, as in senile cortical erosions, are seen in corresponding Nissl preparations from the same regional areas. Finally, the presence of plaques in greater or less number serves as an additional microscopical feature to differentiate these cases.

In the non-plaque material from elderly subjects dying insane,

as pointed out above, seven are clearly arteriosclerotic dementia on their clinical side. These seven cases present wedge-shaped cortical areas of destruction in which there is marked fibrillary glia proliferation. In three of the cases, if one puts aside the focal lesions, the remaining anatomical changes are not essentially different from the preceding group, save in the absence of plaques. On the other hand, one of the plaque cases presents the general histological lesions, including wedge-shaped areas of cortical destruction, as found in seven cases of this group. The plaque cases, as a whole, present lesions more closely allied to senile dementia and normal senile involution, the non-plaque cases, by and far, lesions which are better classed as arteriosclerotic.

The general histological changes found in Case XXXIV, an elderly subject without psychosis, are essentially the same as those of the plaque cases, though of less intensity. The histological changes in the remaining five subjects without psychosis were more of the character of lesions found in the purely arteriosclerotic cases.

XI. Summary and Conclusions.

The central point of this study has been the miliary plaques commonly found in the brains of persons dying at an advanced age. Consideration, however, has been given many other factors which might have a causative relationship, or at least serve as an explanation for these peculiar structures. A reasonable number of cases (eighty-nine) have been studied more or less systematically and four other cases added to the supplementary group discussed under section VIII brings the total to ninety-three. Some of the findings lead to conclusions which may be stated with a degree of positiveness almost axiomatic; others still await interpretation. The results of this study may be summarized as follows:

(1) While 87.5 per cent of plaque cases exhibited atrophy sufficiently marked to be detected with the unaided eye, other cases with equally marked atrophy were without plaques. Cases with brains weighing well within the range of accepted normal weight have shown plaques on microscopical examination, while other brains coming under the same category have been negative.

(2). A large percentage, (62) of plaque brains exhibited gross focal lesions resulting from arteriosclerosis and all showed more or less advanced cerebral arteriosclerosis. But cerebral arteriosclerosis was even more pronounced in non-plaque brains. Arteriosclerosis *per se*, therefore, appears to have little, if any, direct causative relationship to the formation of plaques.

(3) Brains exhibiting general histological evidence of senile involution, whether from persons dying insane, or from persons dying without psychosis, are the most likely to yield plaques.

(4) Since plaques have been found in the brains of elderly persons dying insane and in the brains of elderly persons dying without psychosis, and also as recorded in the case of a young tabetic without psychosis, these peculiar structures can not be considered as characteristic for any special form of mental disease, although occurring with greater frequency in senile dementia than in any other form of insanity.

(5) The onset of senile involution varies in different persons and this may explain the presence of plaques in the brains of some elderly persons and their absence in others.

(6) From the evidence furnished by Case XV of this series and the published cases of Alzheimer and Perusini, a precocious senium is conceivable. By precocious senium, however, something more than an early cerebral arteriosclerosis is meant.

(7) Plaques when present in a given subject are more numerous in the portions of the brain which show the maximum of general pathological alterations. Hence in senile dementia, the group of cases which shows the most frequent and extensive involvement, the frontal and hippocampal regions, as a rule, exhibit the greatest number of plaques.

(8) The presence of plaques in the molecular layer of the cortex and in the white substance, often in great numbers, leads the writer to contend against an origin from degenerating ganglion cells. The view of deposited products of pathological metabolism resulting from degenerating nervous elements (fibrils) is advocated. The glial and also the apparently incontrovertible neural proliferations are interpreted as attempts at elimination of the deposited products. These attempts at elimination and replacement, nevertheless, do not appear successful.

(9) The general histological evidence of these cases tends to show a similarity between the lesions of senile dementia and normal senile involution of the brain. The non-plaque cases of the series more nearly approximated the histological lesions of arteriosclerotic dementia. On the other hand certain non-plaque cases which coursed clinically as senile dementia did not show histologically, except by absence of plaques, lesions essentially different from the plaque cases.

(10) Uncomplicated senile dementia appears on histological grounds, therefore, to be only an intensification of alterations found in normal senium.

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EXPLANATION OF PLATES.

Fig. 1.—Bielschowsky's silver impregnation. Plaques in outer laminæ of paracentral cortex of Case I, severe form of senile dementia (presbyophrenia). Bausch & Lomb 2-3 achromat. obj., no ocular, bellows extension 1 m. 75 cm.

Fig. 2.—Bielschowsky's silver impregnation method. An unbroken array of plaques extending throughout the cortex into the marrow. Prefrontal area, left, of Case XV. Clinically and anatomically resembling cases described by Alzheimer and Perusini, designated in 8th. edition of Kraepelin's Clinical

Psychiatry as "Alzheimer's Disease." Verick obj. No. O, no ocular, bellows extension 1 m. 92.5 cm.

Fig. 3.—Bielschowsky's silver impregnation method. Ammon's horn of Case XXXXIV, a man aged 80, dying without psychosis. Plaques in this region are generally larger than found elsewhere. Compare with Fig. 2, both figures taken under identical magnification.

Fig. 4.—Bielschowsky's silver impregnation method. High magnification of one of the plaques shown in Fig. 1. A homogeneous nuclear-like body is displayed surrounded by globules, between which there is a diffuse tingeing, rod-like fragments—some straight, others slightly spiral. At periphery, lower right, an intact ganglion cell. No appreciable thickening nor proliferation of axis cylinders. Zeiss 2 mm. apochromat obj., projection oc. No. 2, bellows extension 80 cm.

Fig. 5.—Mann's eosin-methylene blue stain. Frontal area of Case XIII, "simple senile dementia." The plaque exhibits a central dark homogeneous mass with peripheral projections. Surrounding the nuclear-like mass irregularly staining globules and glia cells are seen. (Alzheimer's *Kern* and *Hof* respectively.) In the portion of the plaque designated as the "court" fissures suggestive of channels are seen. Whether these fissures are artefacts, or whether channels for the elimination of degenerated stuffs is not determined from this study. Zeiss 2 mm. apochromat obj., projection oc. No. 2.

Fig. 6.—Bielschowsky's silver impregnation method. Frontal area of Case X, severe senile dementia complicated with advanced cerebral arteriosclerosis. Moderately advanced attempt at glial encapsulation. Large fibre-forming glia cells at periphery sending, on the one hand, fibrils which may be traced as far as the central nuclear mass, and on the other hand, in one instance at least, fibrils to a nearby blood vessel.

Fig. 7.—Bielschowsky's silver impregnation method. Large, more or less square plaque from the innermost layer of left prefrontal region, Case V, a woman 79 years of age, who had recovered with defect from a psychosis 27 years previous, suffered various severe illnesses during the first 40 years of life and in the last illness presented clinically severe involution symptoms which were also demonstrated anatomically. A dark homogeneous central mass is shown surrounded by numerous fibrils many of which under sharp focus are observed to stand in direct relation with glia cells. Below and to right a blood vessel showing progressive-regressive changes. Zeiss 2 mm. apochromat obj. projection oc. No. 2, bellows extension 90 cm.

Fig. 8.—Bielschowsky's silver impregnation method. More or less square plaque from rt. cornu Ammonis, Case V. described in preceding legend. In the region where the homogeneous dark staining mass is usually found, there is shown in this photo. a colony of glia cells which is interpreted as an encapsulating gliosis of a nuclear mass not within the plane of the section. Globular masses, fibrils and peripheral fibrillary gliosis are also present, the latter, however, not in good focus. The photograph was taken to show mainly the central group of glia cells. Photographic details as in Fig. 7.

Fig. 9.—Fuchsin-light green stain. Frontal area, right, Case I. The plaque is roughly triangular in shape, presenting a nuclear-like mass near its mid-portion, numerous globules which take the red element of the stain in various nuances, numerous fuchsinophile granules, fragments of axis cylinders and glia nuclei. Unfortunately the photograph does not do justice to the various color reactions of the plaque, which are beautifully displayed by this stain. Zeiss 2 mm. apochromat obj., no ocular, bellows extension 1 m. 22 cm.

Fig. 10.—Bielschowsky's silver impregnation method. Parietal area of Case V described in legend for Fig. 7. The plaque is composed chiefly of rather thick, curled and spiral fibrils which are not glial, but, for the most part, proliferated axis cylinders. Many of these fibrils are undergoing regressive changes. This type of plaque, while not rare, was less frequently encountered in this study than the type of plaque shown in Fig. 4. Zeiss 2 mm. apochromat obj., projection oc. No. 2, bellows extension 95 cm.

Fig. 11.—Bielschowsky's silver impregnation method. Ganglion cells exhibiting Alzheimer's type of intracellular neurofibril degeneration. De-

spite the marked alteration of the cellls there is no satellitosis. Indeed in the neighborhood of some cells satellites are absent. Nine cases presented this type of ganglion cell degeneration. In three cases they were found only in the cornu Ammonis and one of these was an aged man dying without psychosis. In general the frontal and hippocampal region show the greatest number. Sometimes, in frontal lobes, all of the cortical laminæ are effected. Where such cells are few the small pyramidals present the greatest involvement; next to these the cells of the fusiform layer. Some sections show scarcely a cell in which there is no evidence of the change. All of the cells here photographed were taken under the same magnification and represent different cortical laminæ. Zeiss 2 mm. apochromat obj., projection ocular No. 2. Bellows extension 1 m. 50 cm.

FIG. 12.—Bielschowsky's silver impregnation method. Large pyramidal cell of prefrontal cortex from a manic-depressive, 55 years of age. No plaques found. The case was one of the supplementary material discussed under section VIII. Many ganglion cells showed darkly staining, thick, tortuous neurofibrils suggestive of possible early stage in Alzheimer's degeneration. No young subjects showed anything quite comparable. Similar cells were also seen in cases which showed a well-advanced Alzheimer's degeneration. Drawn with the aid of an Abbe camera lucida, Zeiss 2 mm. apochromat obj., compensating oc. No. 8. Reduced 1-5.

FIG. 13.—Fuchsin-light green stain. Blood vessel in the marrow of right occipital lobe near the cortex and at periphery of recent focal softening, Case XVII. Clinically a case of post apoplectic dementia; anatomically recent focal softenings, pacchymeningitis hæm, interna, marked hemiatrophy due to ancient lesions of left basal ganglia and internal capsule. Numerous large *Abraumzellen* free in marrow and cortex, singly and in colonies, some of which have coalesced. Adventitia and perivascular lymph spaces crowded with such cells. Coalescence of such cells have been described by Bickel as a form of plaque, here interpreted as usual reaction to acute destruction of nervous elements which may be found in any brain under like conditions. Zeiss 8 mm. apochromat obj., projection oc. No. 4., bellows extension 1 m. 72.5 cm.

FIG. 14.—Bielschowsky's silver impregnation method. Small vessel in layer of small pyramidal cells paracentral cortex of Case V. Arteriofibrosis described in the text. This type of vascular change was found in most of the older plaque cases and also fairly common in the purely arteriosclerotic cases of the non-plaque group of elderly subjects. Zeiss 2 mm. apochromat obj., projection oc. No. 2, bellows extension 96 cm.

FIG. 15.—Bielschowsky's silver impregnation method. Cornu Ammonis of Case XVI. Large pyramidal cell exhibiting coarse dark granules surrounded by clear spaces (Argentophile bodies). Such cells are common in Ammon's horn but have been found also in the frontal areas. Usually where found intracellular neurofibrils have for the most part disappeared. Zeiss 2 mm. apochromat obj., projection oc. No. 2, bellows extension 1 m. 27 cm.

FIG. 16.—Toluidin blue stain after Nissl Prefrontal area, left, Case XV. To show the ganglion cell devastation in an area where plaques and Alzheimer's degeneration were well marked. Bausch and Lomb 2-3 achromatic obj., no ocular, bellows extension 1 m. 92.5 cm.

FIG. 17.—Mann's eosin-methylene blue stain. Paracentral cortex of Case XIII. Irregularly shaped plaque showing superiorly large glia cells and a few small globular masses apparently within the glia mesh. Zeiss 2 mm. apochromat obj., no ocular, bellows extension 1 m. 37.5 cm.

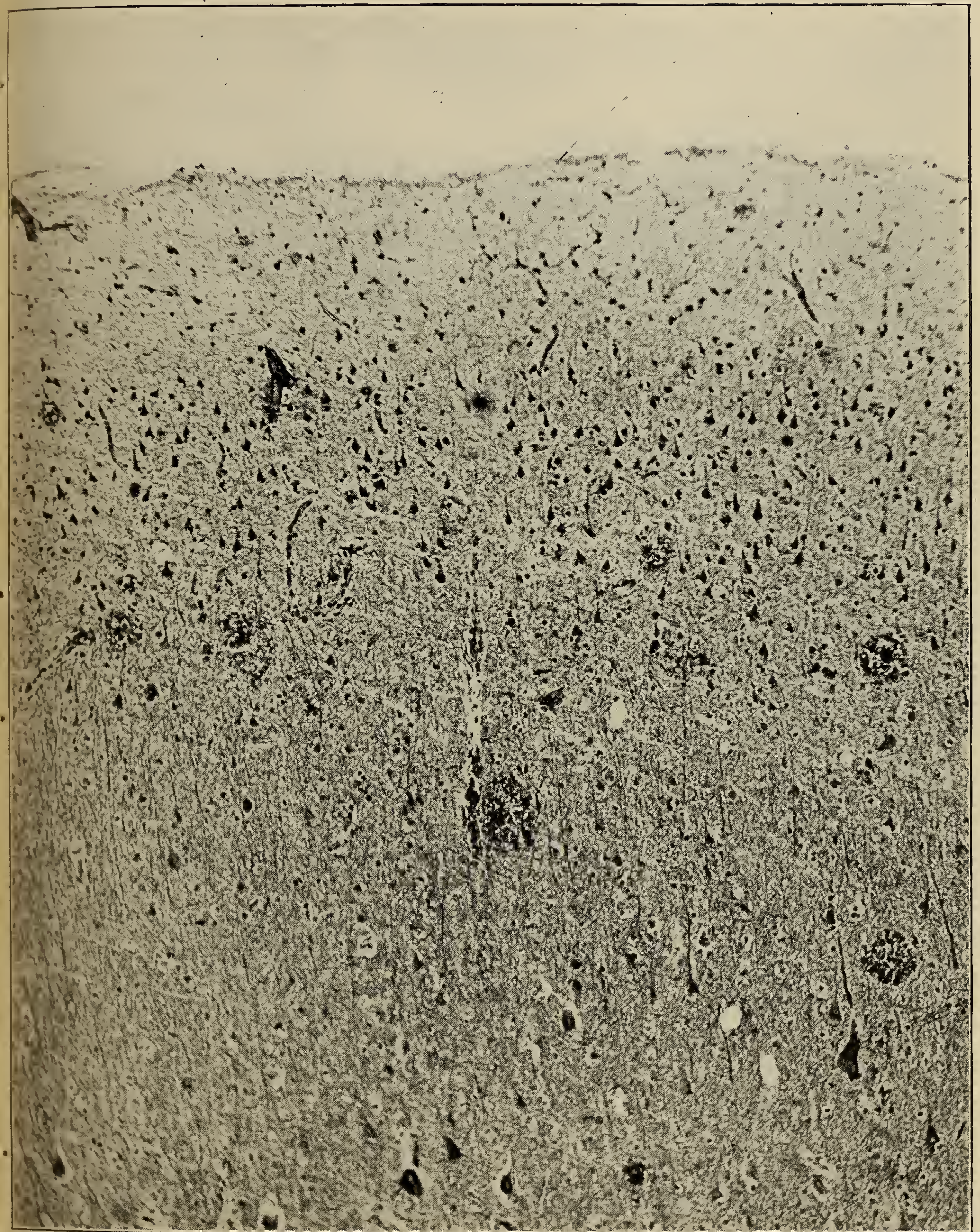

FIG. I.

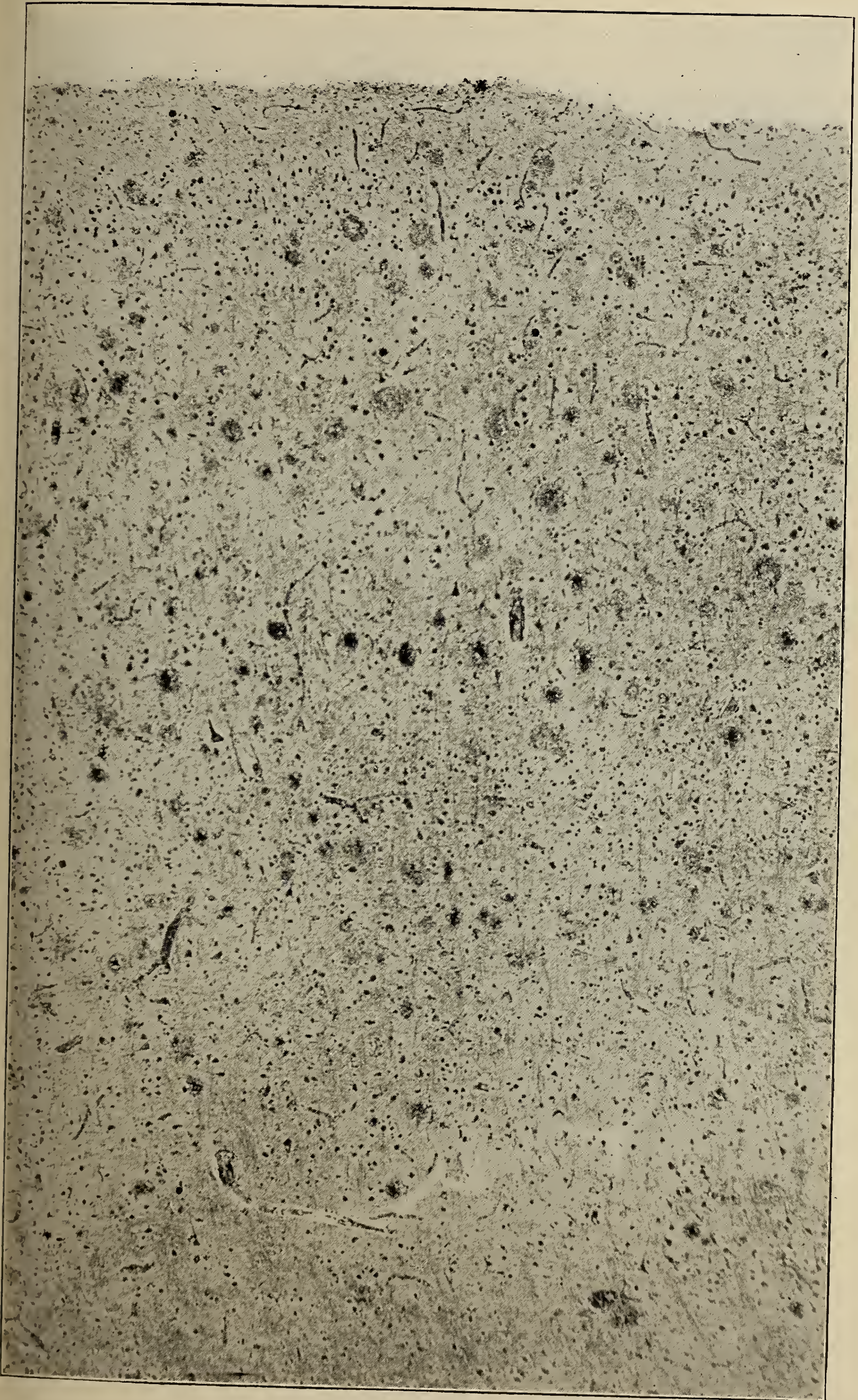

Fig. 2.

Fig. 3.

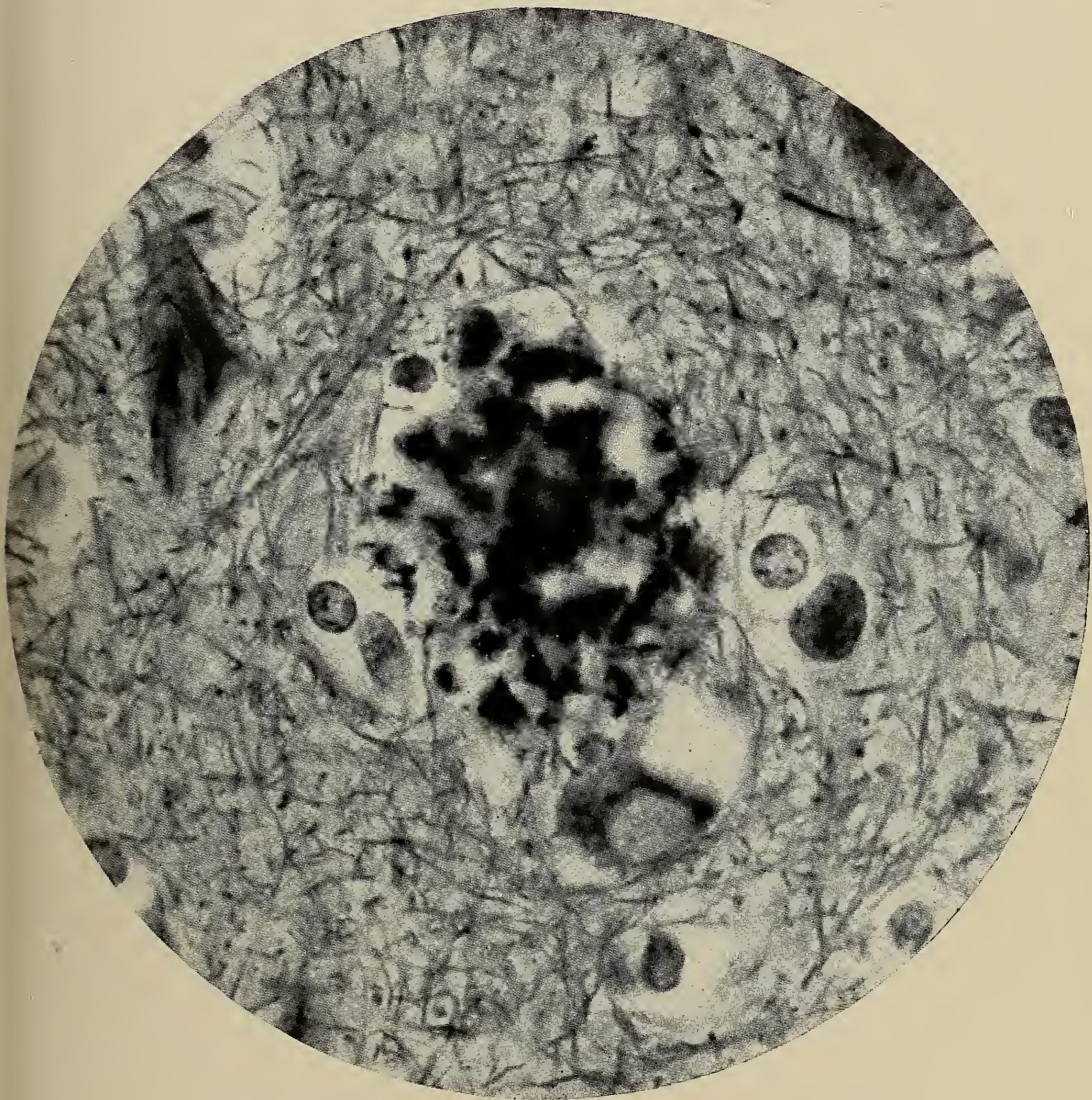

FIG. 4.

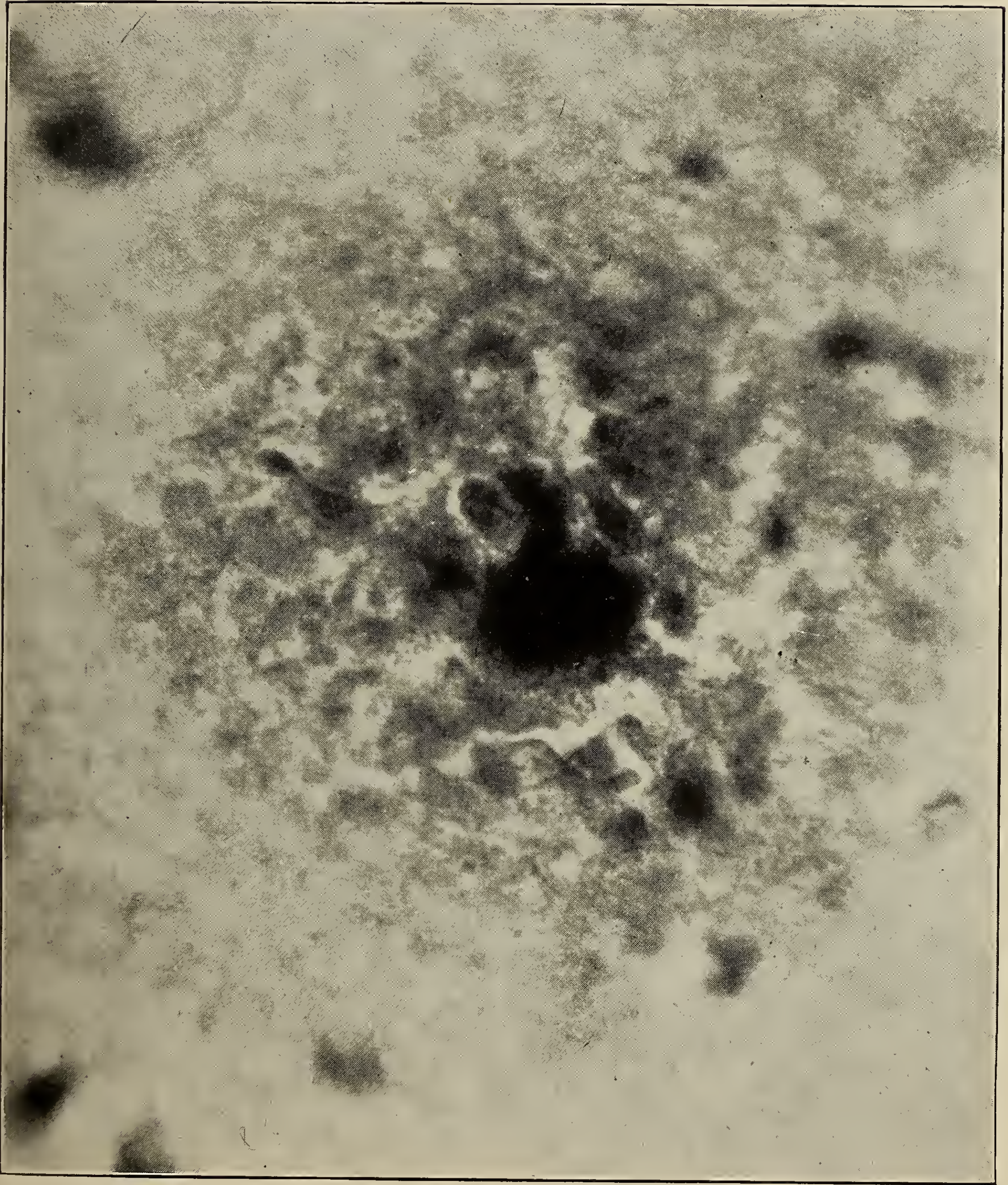

FIG. 5.

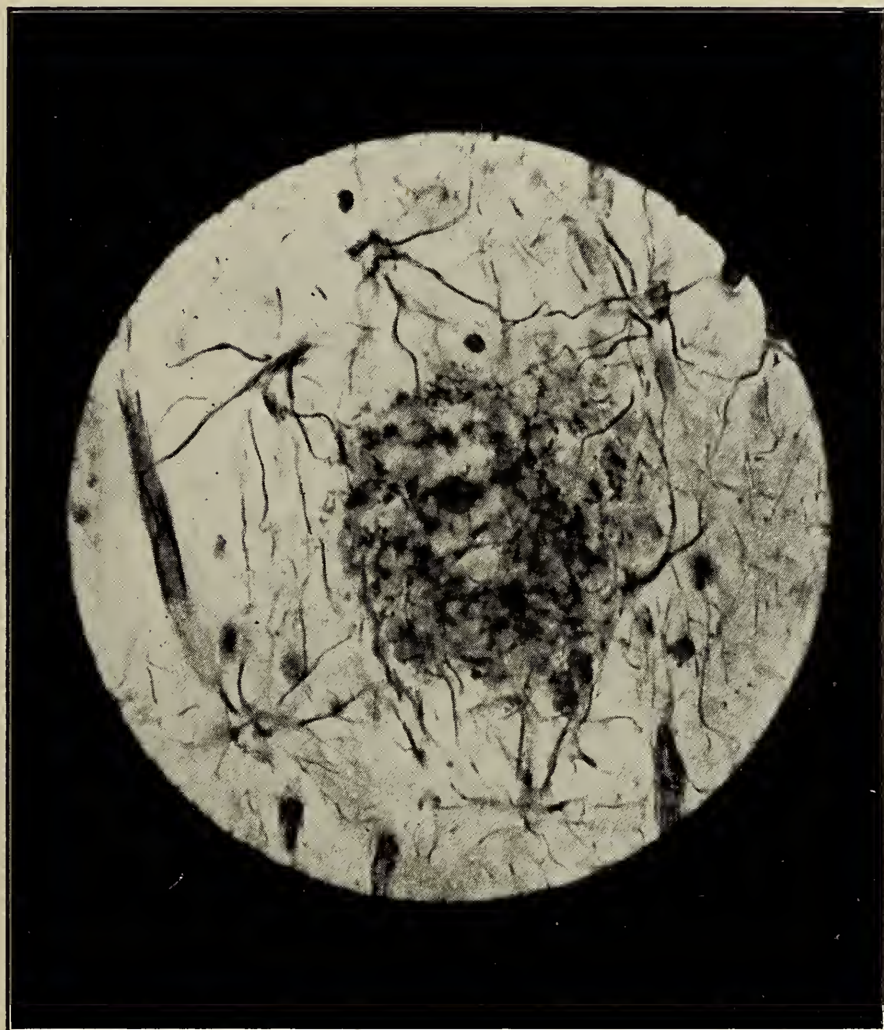

Fig. 6.

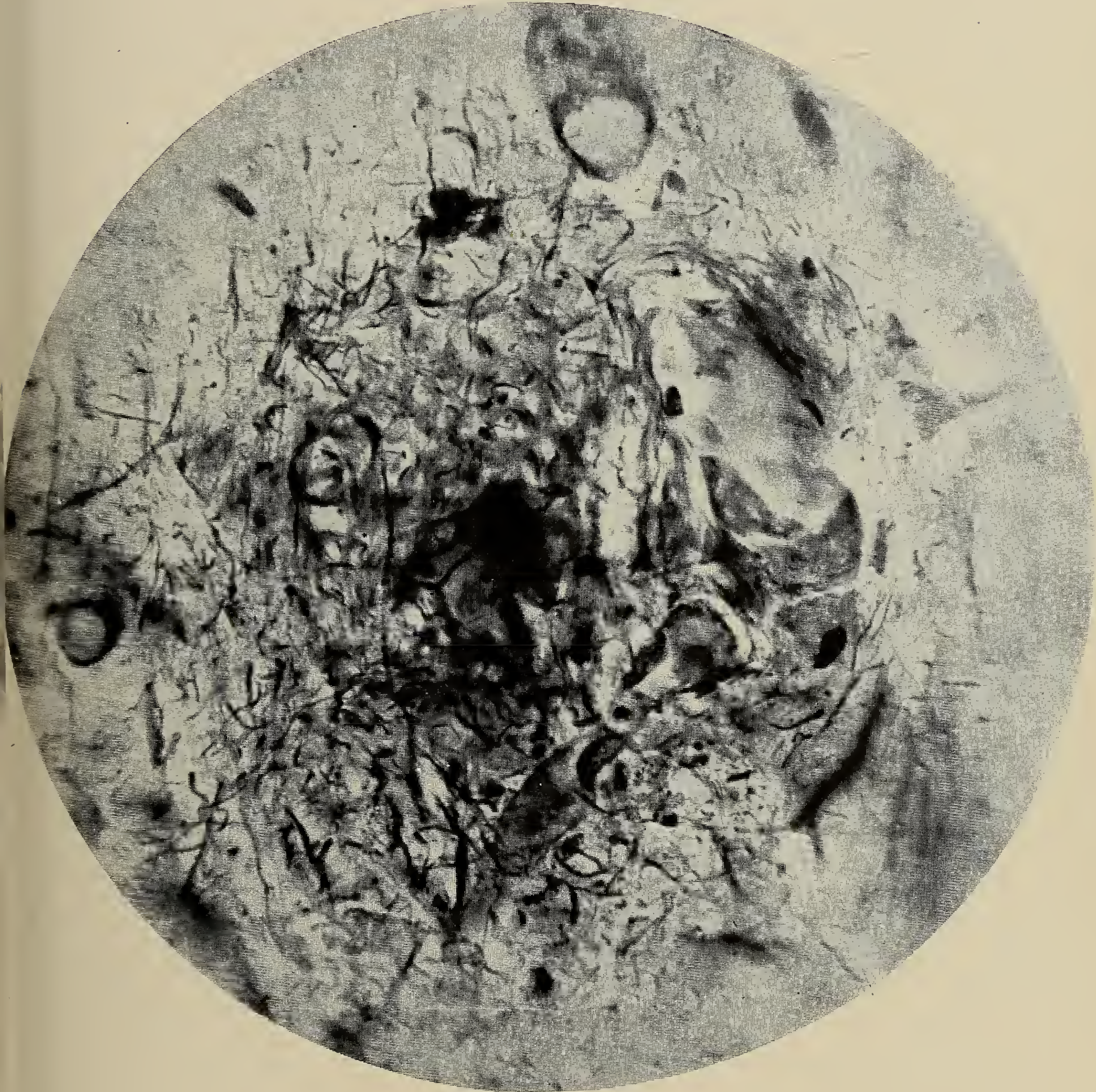

FIG. 7.

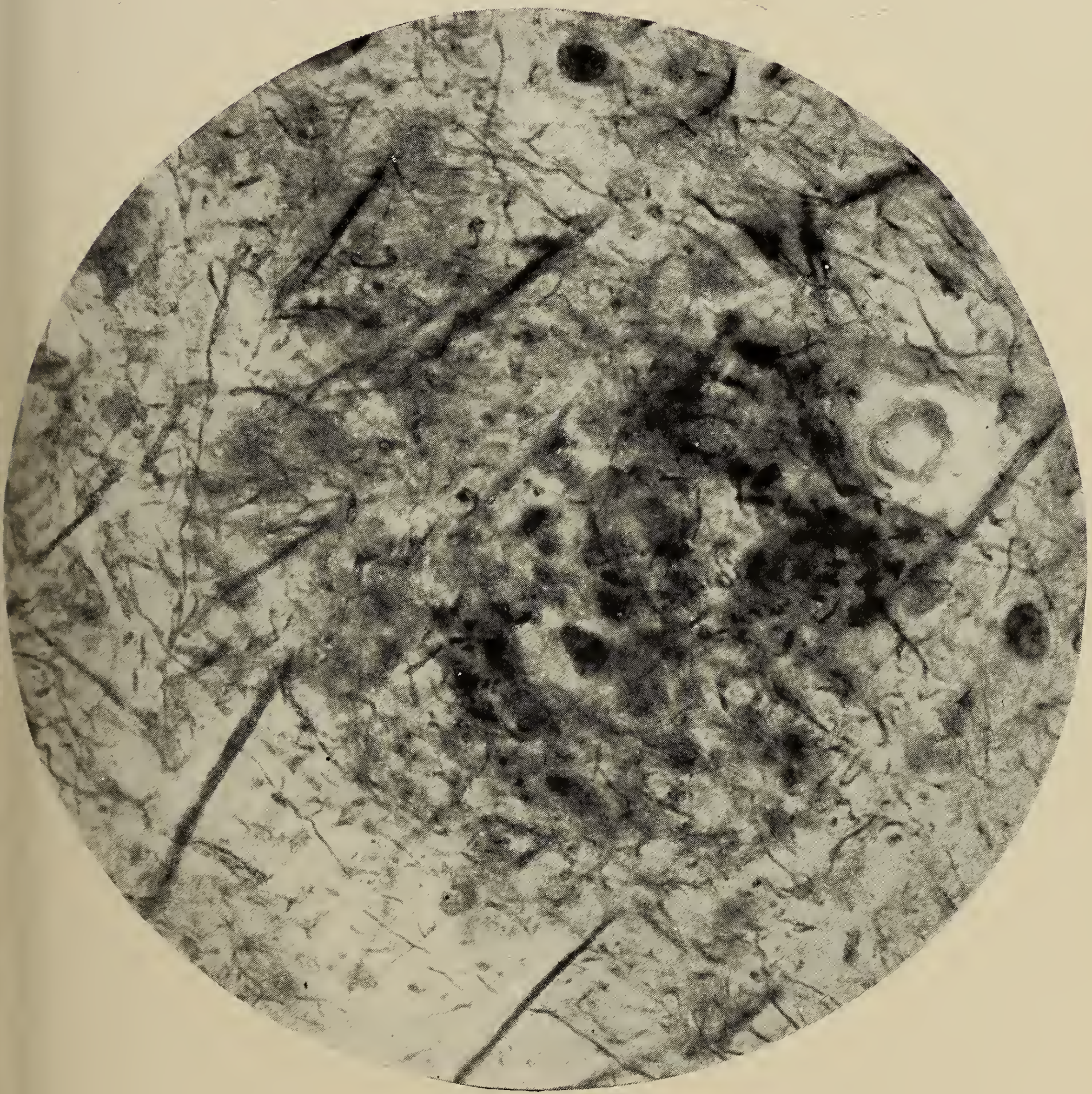

Fig. 8.

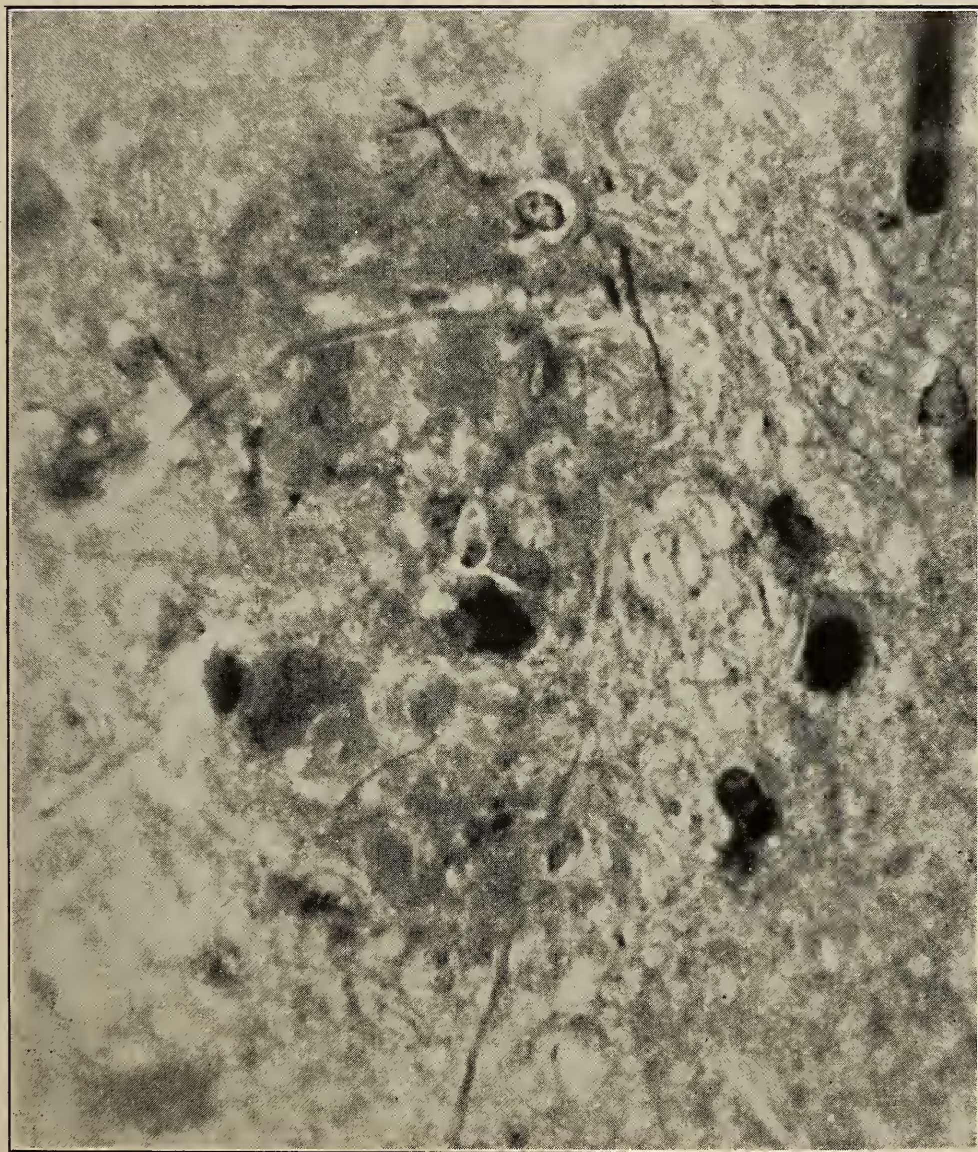

Fig. 9.

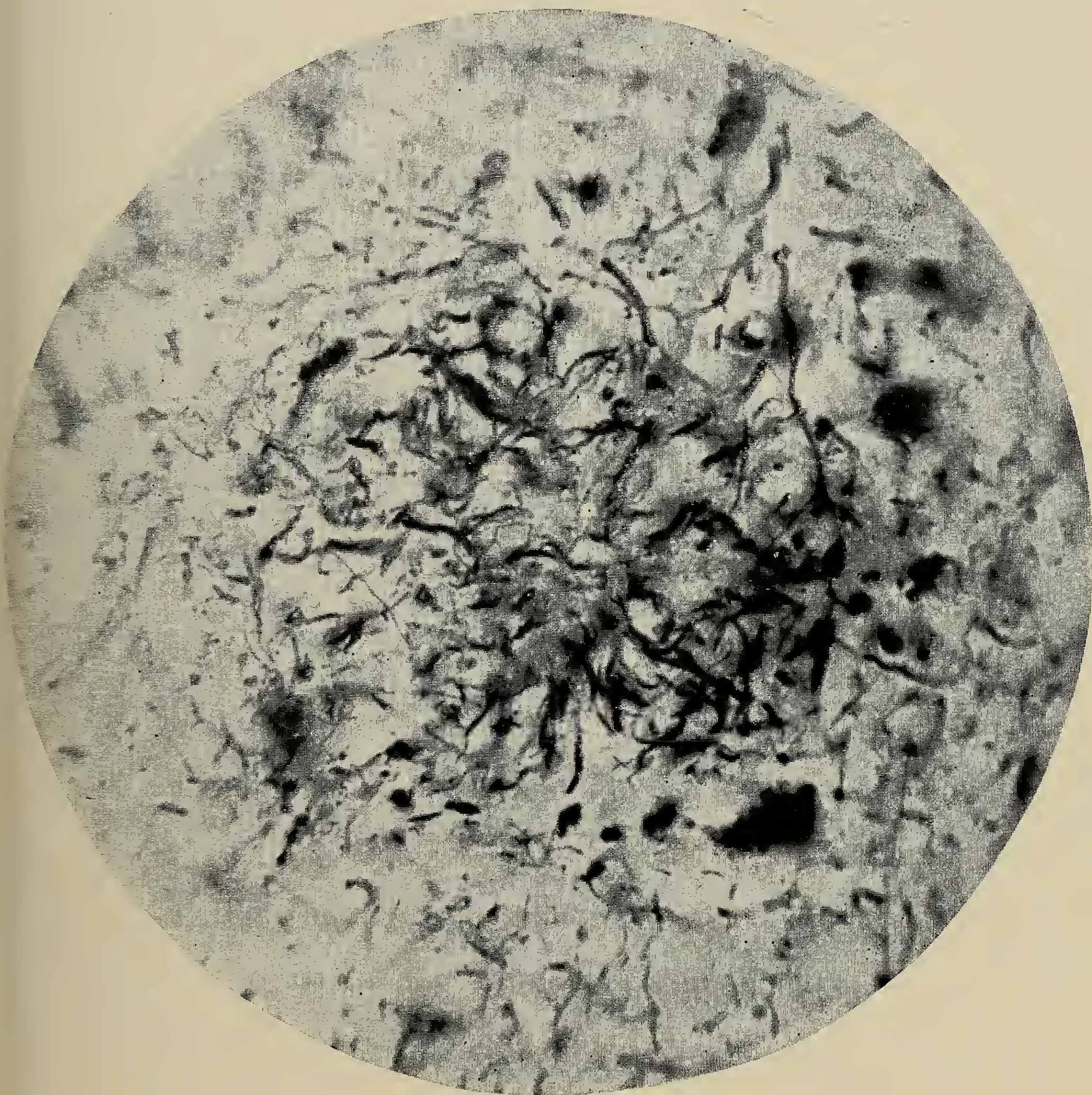

FIG. 10.

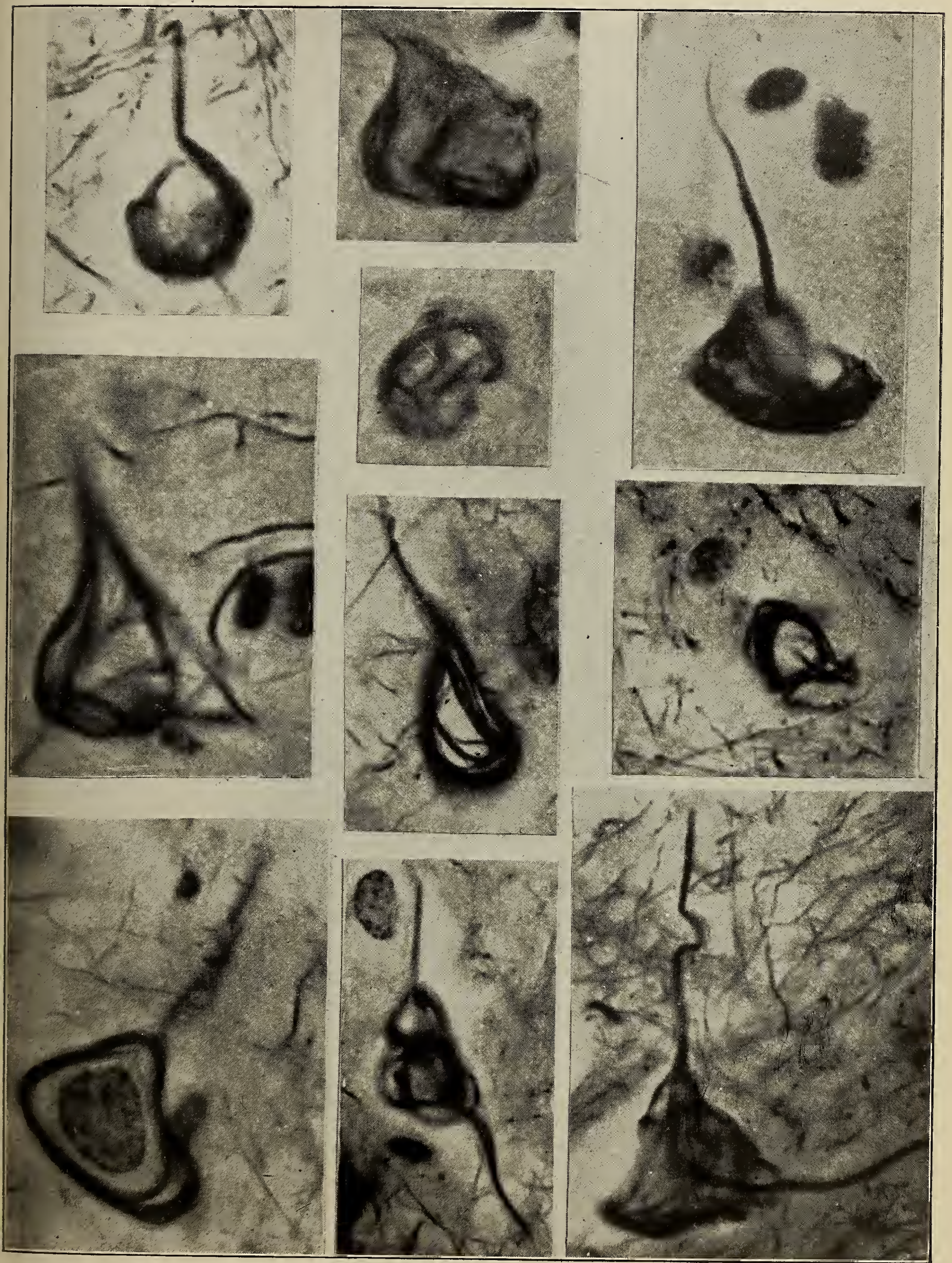

Fig. 11.

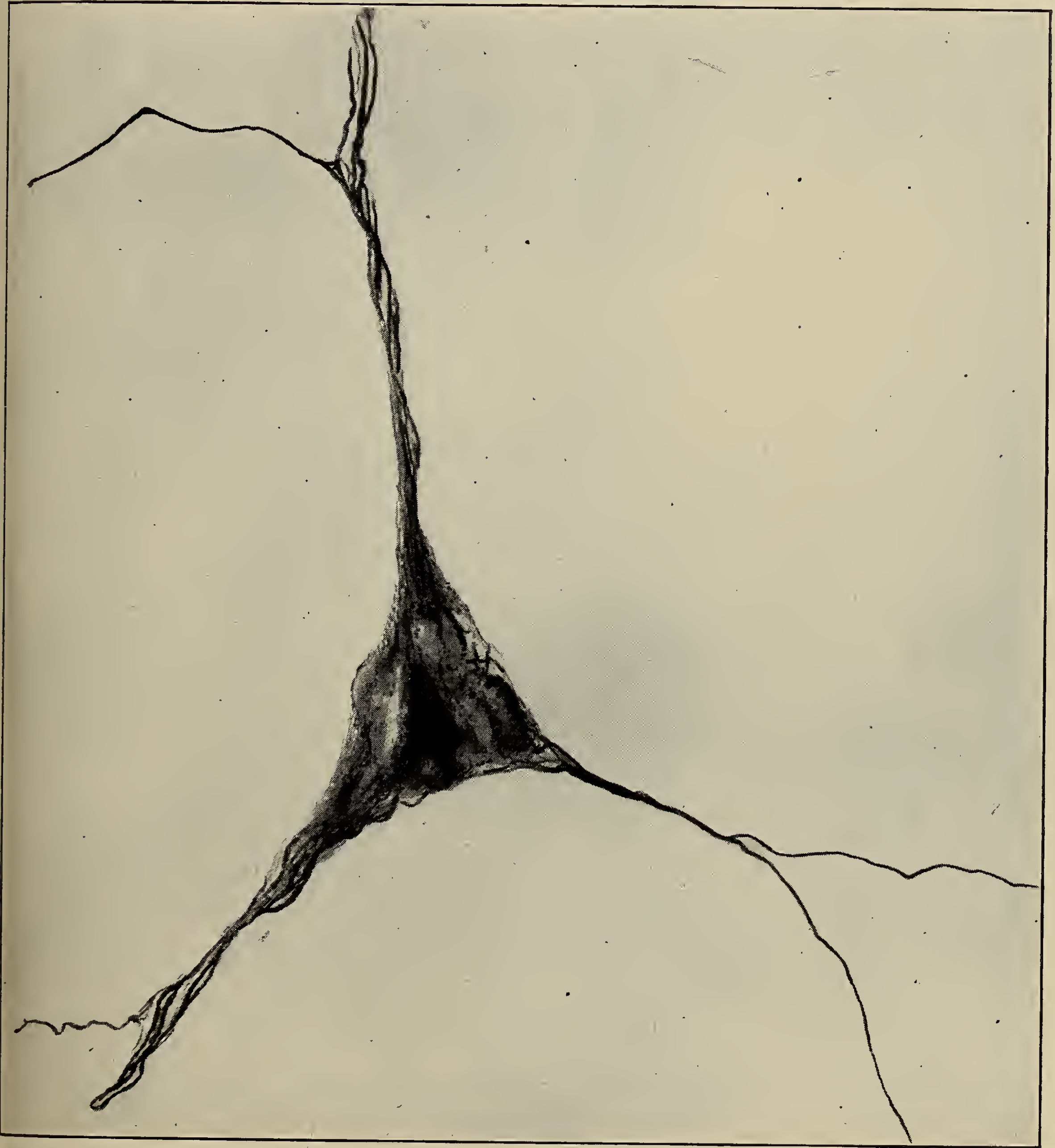

FIG. 12.

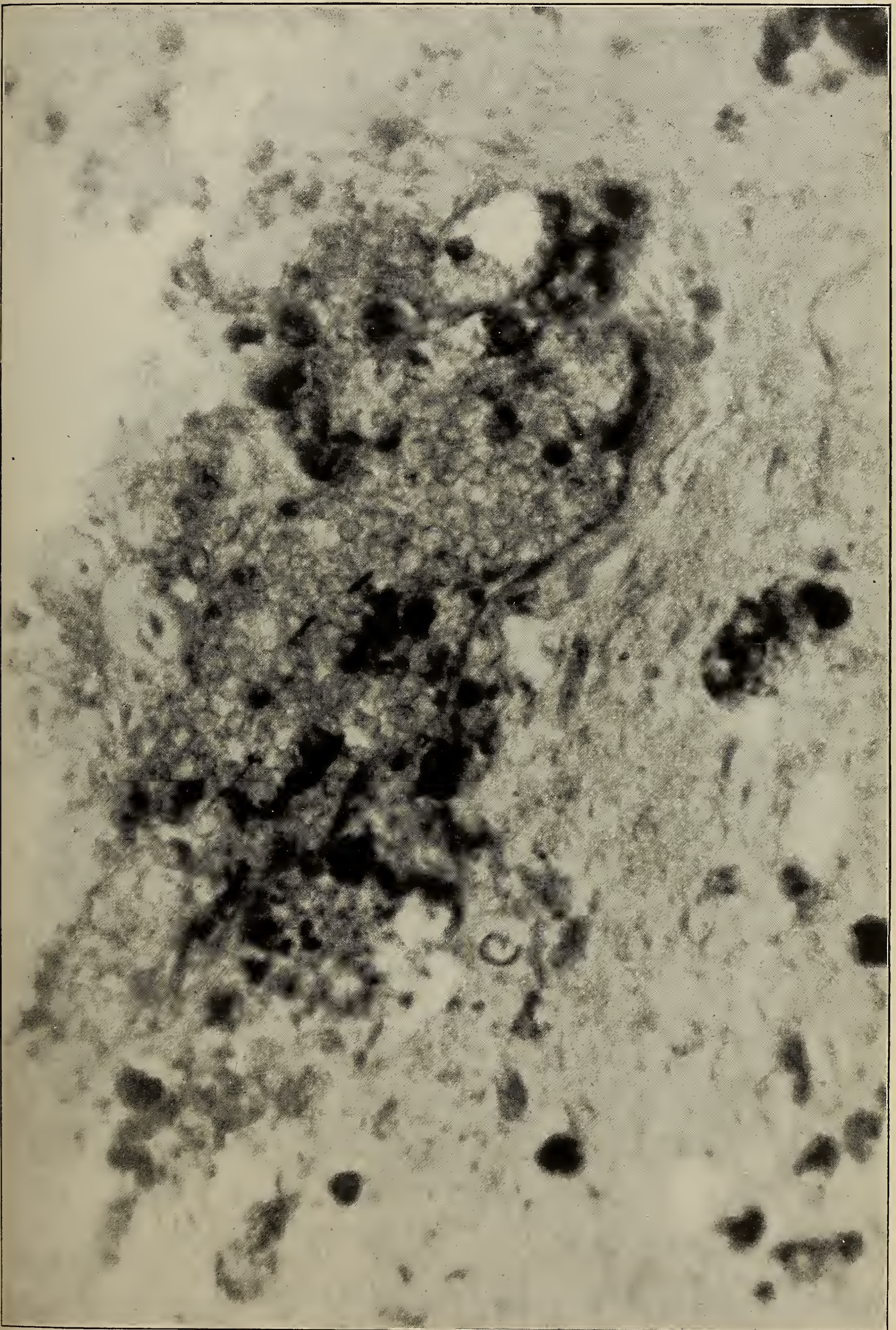

Fig. 13.

FIG. 15.

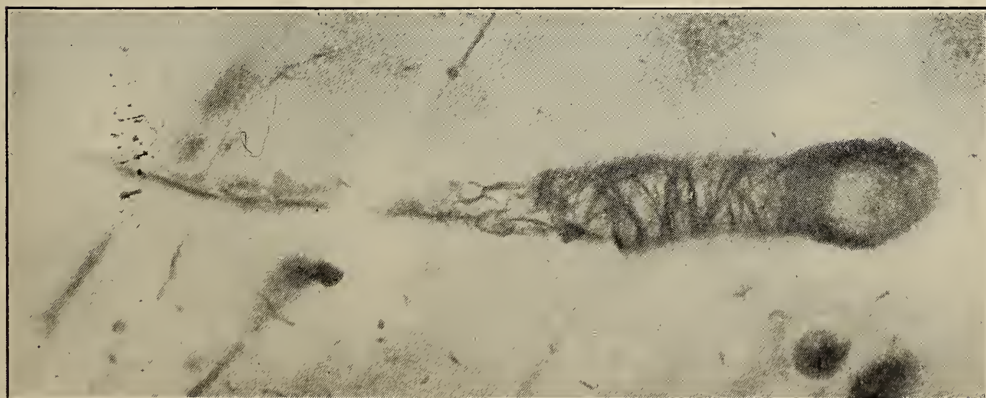

FIG. 14.

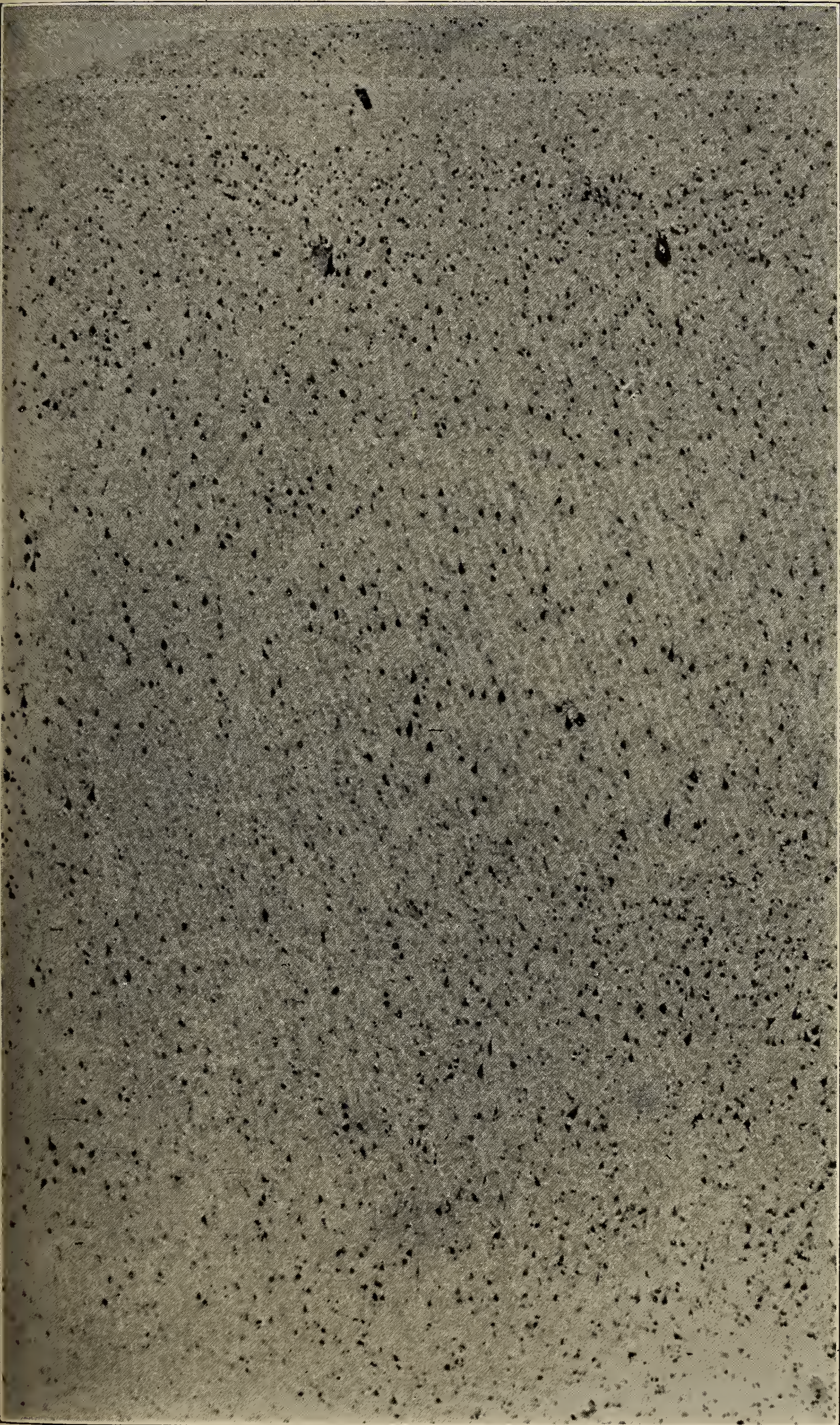

Fig. 16.

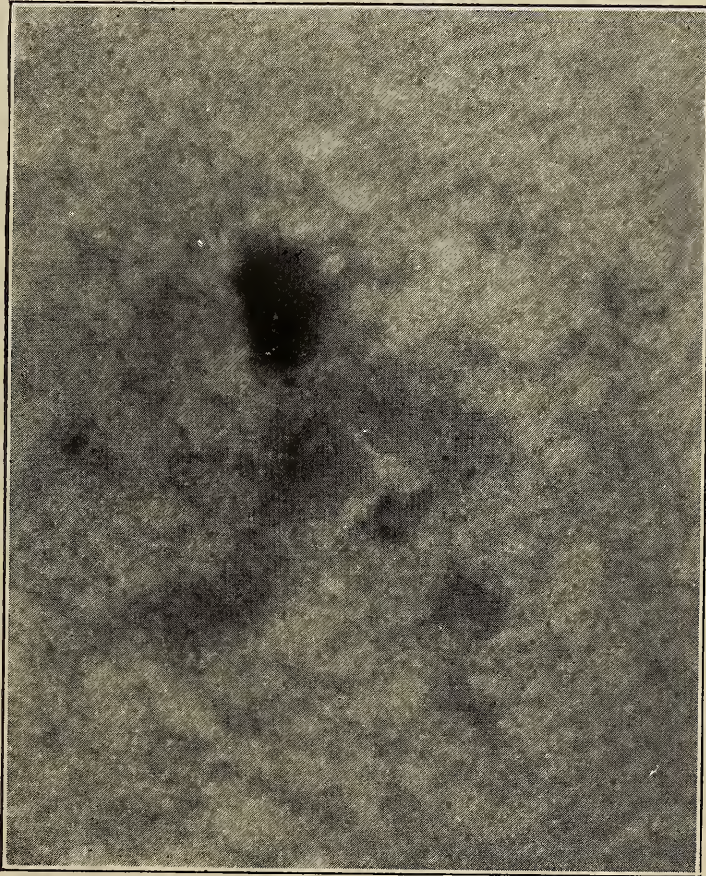

FIG. 17.

IV

RECOVERIES IN DEMENTIA PRÆCOX.

By William W. Coles, M.D.

Perhaps no problem of clinical psychiatry is exciting more interest at the present time than that of the prognosis in dementia præcox. Certainly no questions are more frequently put to the physicians in our various hospitals by anxious relatives than those relating to the outcome of this form of mental disease. Affecting as it generally does the younger members of the family, those in whom parental hopes are centered and who often have, until a comparatively short time before the hospital admission, given much promise for the future, the anxiety to get some definite statement, if possible one that may be encouraging, is by no means incomprehensible. And still less so when the course of these cases is considered, marked as it often is by what appears to the family as a sudden onset due to some trivial incident of daily life, to say nothing of the favorable progress which frequently characterizes the earlier months of their hospital residence.

Basing an opinion upon the statements of the earlier European authorities as well as on observations made during the first years subsequent to the recognition of this form of insanity in this country, the response to these inquiries has often been favorable. Further experience, however, soon developed a conservative attitude which led the physician to place at least a somewhat different interpretation upon clinical features which are common to almost all psychoses. "Possible recovery with defect" came to be the standard formula with which these anxieties were met, while in the minds of many psychiatrists the rapid deterioration following periods of temporary improvement as well as the profound disturbances characteristic of the more frankly unfavorable types, overshadowed the picture and "once a dementia præcox always a dementia præcox" came to be a commonly heard phrase in the privacy of the office, if not in the reception room; but careful students of psychiatry have not been willing to accept either the relative optimism of the earlier view nor the epigrammatic pessimism of the later, without statistical data, and the present paper is offered as a contribution to this phase of the subject.

We have taken our material from a group of cases admitted to the Westborough State Hospital during the years 1904, 1905 and 1906, believing that the intervening six to eight years should give us a reasonable perspective for our observations, an opportunity to determine the validity of our opinion of the patient's

condition at the time of discharge. Three hundred and two cases subsequently diagnosed as dementia præcox were admitted to the Hospital during the above mentioned period, 182 women and 120 men. Of this number 124, 75 women and 49 men, have been constant residents here, have been transferred to some other hospital in the State or are boarded out in private families under direct observation of the State Board of Insanity. The course of the psychosis in those resident in this institution has been progressive, and the report concerning those transferred to other State hospitals or boarded out is no more favorable. Thirty-two, 23 women and 9 men, died in this or another hospital. Thirty-four, 16 women and 18 men, were deported either by the United States Immigration Commission to their native countries or by the State Board of Insanity to other States. None of these cases were classed as recovered at the time of their discharge from the hospital. Five men made good their escape from the institution and under the names they bore here have not been admitted to any other hospitals in the State; two of these having taken up their residence, one in a Southern and another in a Western city, have written letters to us which are part of our records and fit in well with the psychosis as observed during their hospital confinement. Seventy-two, 45 women and 27 men, were permitted to leave the hospital in the care of friends but were not considered as recovered at the time of their discharge and for this reason have been eliminated from special consideration in the present paper. However, the writer is familiar with the subsequent history of a fair percentage who have been able to remain at home but have shown a degree of indifference or instability characteristic of the milder cases of dementia præcox.

There remain, then, as the subjects for the present study 35 cases, 23 women and 12 men. Of this number one man was accidentally drowned a few weeks after his discharge from the hospital and his case can be eliminated. Another man having had a previous admission to the hospital was removed as a recovered case, but after a relatively short remission was recommitted and has for the past three years shown marked indifference and untidiness, features which were not observed to any extent during his former hospital residence, though the diagnosis of dementia præcox had not been questioned. Three cases, two women and one man, were subsequently readmitted to the hospital and again discharged recovered, the diagnosis in each having been changed at the second admission to manic depressive insanity. For obvious reasons those cases can be left out of our discussion.

An attempt has been made to obtain data as to the subsequent

histories of the remaining thirty cases. The difficulties are of course apparent. Several of our letters of inquiry met with no response whatever, owing probably to indifference on the part of relatives or friends or even, possibly, to suspicion of the motive prompting the inquiry, not unnatural among the ignorant. As many more we were unable to reach owing to changes of residence. We have been able to communicate directly with twelve cases, five by personal interviews and seven by letter.

Case I. No. 6023. Admitted June 1, 1904, age 21. Family history negative, but both parents were of mixed white and negro blood. Healthy until the present illness, free from any eccentricities, a graduate at 17 of a city high school and since then employed as a milliner. She has worked very hard in the shop and done sewing for herself at home in the evening beside studying music. Six months ago she suffered a nervous breakdown and had to give up her work, but had returned to it though not entirely well, and her work worried her. The death of her mother at this time she took greatly to heart. Menstruation had ceased for three or four months. A week before admission she suddenly developed the idea that she had committed some crime and was to be arrested. She said that she had disgraced her family, made repeated attempts to suicide and was excited, restless and emotional. She masturbated excessively. After her admission the excitement continued, resistiveness was a feature, and she made attempts to suicide. Delusions with hallucinations persisted. To relieve the apparent intense sexual excitement orificial work was done, but there was no improvement until December 1904, when she commenced to interest herself in her surroundings. She improved slowly but made frequent complaints of pain in the left ovarian region. After careful consideration and surgical consultation a vaginal hysterectomy was performed, the left ovary being found cystic and the tube inflamed. She made rapid progress after recovery from the operation, and November 27, 1905, was discharged, showing good insight and her normal ambition for work. Her brother reports that she has continued to improve at home and gained in weight. For the past four years she has been in business for herself as a milliner and dressmaker and has done well.

Case II. No. 6095. Admitted July 29, 1904, age 24, a native of Austria, five years in the United States. Mother insane for a year in middle life, but recovered. Maternal uncle died of apoplexy. A tailor by trade, he has worked steadily all the time since coming to this country, but changed his place of employment three or four times. For the past two years, has worked very

hard and in the same place. Became tired out and decided to take a rest, in the early part of July going to a Y. M. C. A. camp in northern New England. Remained there but one week, saying that he could not rest because of the noise. Returned home and gave expression to persecutory ideas and fantastic delusions dealing with religion. He was irritable and confused.

When admitted he was not confused but excited, irritable and occupied with his persecutory delusions. He showed ideas of reference. After a short period of improvement, during which partial insight developed, he again became excited, and these fluctuations in his conditions persisted for six months. At times he was untidy and negativistic. During the middle of January, 1905, he was interested in regular employment and made a steady gain. He left the hospital for a trial visit March 1, 1905, and renewed his furlough April 29, having worked steadily at his trade and appearing in a normal condition. He was finally discharged April 30, 1905. Following his discharge he worked for nine months for his brother and has since been in business for himself, doing well.

Case III. No. 6265. Admitted December 18, 1904, age 18. Hereditary tendency denied. Has always been a source of anxiety to his family, could not learn in school and though a fair worker was very unstable and often ran away from home. He was very untruthful, and stole money from his family and employers. He was twice at the Lyman Reform School, and because of excitement, violence and threats of suicide during his last residence there was committed to Westborough.

When admitted he showed no defect of memory or orientation and was not especially excited. He claimed that he heard voices which threatened him with death. His range of thought was limited and judgment very poor. After the first day he never referred to hallucinations except on one occasion following a short period of irritability, a frequent symptom if he was not allowed his own way. He made his escape once from the hospital but was returned after two months, during which he had worked a part of the time. He claimed to be subject to what he called "fainting fits," but they never manifested themselves during his hospital residence. From February 1906 to the time of his discharge, March 1, 1907, he was fairly stable but always showed the same limited range of ideas and was dependent on others to a marked degree, having some new request to make of the physician at every opportunity. Certain facial mannerisms developed during this period. He has visited the institution several times since his discharge, and though he has managed to keep out of trouble and

has worked more steadily than formerly he shows the same general characteristics.

Case IV. No. 6299. Admitted January 13, 1905, age 25. Father alcoholic and a patient at Danvers before his death. Many of the paternal grandmother's people were tubercular. After passing the period of susceptibility to the children's diseases he suffered from nasal catarrh and had an attack of typhoid in 1900. Was always very self-conscious and inclined to keep by himself. He gradually grew a little deaf, and for two years complained of ringing in his ears. He graduated from the Massachusetts Institute of Technology in 1901, in the department of Electrical Engineering, and has been employed in the West in the practice of his profession. For a year he has not had his usual ambition for work and has seemed dull and indifferent, as shown by his letters from the West as well as in his attitude after coming home in November 1904. At that time he was depressed, talked of himself as a failure and was suicidal; was at a private sanatarium for a short time before coming to Westborough.

When admitted was much depressed and very nervous, constantly sniffling and biting his nails. Talked of his life as a failure and of his hopeless future. Orientation and grasp on his surroundings were good and he had partial insight. No hallucinations. A period of marked apathy with mutism and untidiness supervened immediately following admission and he tried to escape from the ward. In the latter part of February frank cataleptic manifestations with cerea flexibilitas developed, persisting until the middle of May with marked loss in weight. At that time he again began to talk, showed evidence of active hallucinations of hearing and threatened suicide persistently. During the summer and fall he showed a little improvement, but in December 1905 he passed into a state of acute excitement, was very noisy and incoherent, talking in a silly manner and showing marked restlessness. He was utterly careless as to his appearance. During 1907 the excitement gradually subsided and he became very apathetic, though hallucinations persisted. In November of that year he passed through an attack of acute rheumatism, during which there commenced a definite improvement in his mental state. On January 28, 1908, he gave a detailed account of the experiences of his psychosis and the delusions to which he had given expression, showing good insight. He could recall nothing of the cataleptic period. He was anxious to leave the hospital but was willing to leave the matter to the discretion of the physicians. His subsequent recovery was uneventful, and June 19, 1908, he was discharged. His mother states that he has been well since

and worked regularly at his profession in spite of the fact that his illness meant some loss of standing among certain of his associates. He has had an attack of appendicitis without the development of the least mental abnormality. To quote his mother: "He has fully recovered mental balance. He seems to have suddenly emerged from boyhood to manhood, with a keen sense of all of a man's responsibilities."

Case V. No. 6442. Admitted May 5, 1905, age 34. Father intemperate. Patient of a nervous temperament, two choreic attacks in childhood, an attack of la grippe in 1898 which left her very weak physically for a year. Latter part of March present year a second attack of la grippe lasting two weeks. She then commenced to develop vague fears of impending calamity. She went to visit a friend, and soon got the idea that the friend was holding her a prisoner for some purpose. At this time she admitted that she was not in her right mind, said that she could not think. On admission she was well oriented and had some insight, but repeated her delusions and said that recent experiences were very much mixed in her mind. She was very quiet. Three days later she became excited, restless and gave evidence of hallucinations of hearing. This condition persisted during the summer and was followed in the early autumn by a period of dulness, negativism and a tendency to be unsocial. There was no retardation. In November she commenced to gain in weight with corresponding mental improvement which persisted until her discharge March 18, 1906, at which time she had full insight and a normally ambitious attitude toward the future. She has since been constantly employed as a typesetter and seems normal in every way.

Case VI. No. 6608. Admitted October 18, 1905, age 33. Heredity denied. Always well as a child and has been a healthy woman. Married two years, and August 27 gave birth to her first child. Two weeks later, while apparently making a good recovery from the puerperium, a child belonging to one of her sisters died. This upset her very much and she became much depressed, refusing to have anything to do with her own baby. She then became excited and talked incoherently. When admitted she was depressed, confused and seemingly negativistic. She refused to answer many questions. In October and November she took no interest in her surroundings and was constantly tube-fed. Early in December she commenced to improve and by the end of the month was able to give an account of her actions and ideas, admitting that she had been insane. The subsequent recovery was complete and she was discharged January 31, 1906. Her husband states that she has been perfectly normal since and has given birth to a second child without any accompanying mental symptoms.

Case VII. No. 6777. Admitted January 11, 1906, as a transfer from the Northampton State Hospital, age 22. Maternal aunt a patient here. Aside from the usual diseases of childhood she was well. Married at 16, her first baby came a year later, and two months afterward she became maniacal but was treated at home; has been unstable since. Her husband left her three years ago, since when she has supported herself by doing housework, working in many different families in as many different towns. She was picked up on the street in Springfield, August 30, 1905, acting in a manner indicating excitement and confusion. At Northampton she continued in this state during her entire residence, was hallucinated and had poorly defined persecutory ideas. When admitted to Westborough she was quiet and gave an account of her life corresponding with the known facts, but insisted that her experience at Northampton was part of a scheme of persecution. She continued quiet during her hospital residence, but never seemed indifferent and developed very good insight into her condition. She gained 25 pounds in weight. April 2, 1906, she was discharged. She immediately obtained employment in the Dennison factory at South Framingham, where she continues to work. She has been well physically, is interested in her work but has been under close supervision of her mother, and becomes very irritable if she gets overtired. The mother does not consider that she is entirely normal mentally.

Case VIII. No. 6852. Admitted March 13, 1906, age 20. Mother and maternal grandfather tubercular. Patient never very well as a child and is described as being very nervous. Whenever ill he was delirious. He was ambitious and a bright student, graduating from high school at 18 and later taking a year at Worcester Academy. In September 1905 he entered a technical school in California, having gone West for that purpose. He became very homesick and returned home December 12, but continued depressed and seemed confused at times. He worked in two or three different places, however, during the winter and insisted that he felt very well. Early in March he commenced to show excitement and gave expression to grandiose ideas concerning his wealth and ability as a financier. March 8 he was taken to the Boston State Hospital as an emergency case and while there was excited and destructive. When admitted to Westborough he was excited and irritable, talking in an incoherent manner of his grandiose ideas and giving evidence of hallucinations. He was distinctly undeveloped physically and showed various stigmata of degeneration. He made no improvement until the latter part of April, when he commenced to quiet down and showed some in-

sight. May 8 he was given a limited parole, and a week later went home without leave, being returned by his father the next day. He subsequently continued to improve and was stable, insight becoming complete. He was discharged June 5, his father being advised to give him employment on the farm with freedom from responsibility. He has followed out this advice, and has had no physical illness and is still doing well, taking great interest in his work but not capable of carrying it on without paternal supervision.

Case IX. No. 6917. Amitted May 11, 1906, age 23. Father died at age of 29 of tuberculosis. Patient had always been well and was a good student, graduating from high school at 16 and a year later from business college. Naturally of a mild, even disposition. Her brother's death October 1, 1905, caused her great depression, and in March 1906 she resigned her position, as she was not in good physical condition and suffered from insomnia. The latter part of that month she was very unstable, alternately singing at the top of her voice, playing the piano very loudly or crying in a hysterical manner without provocation. She talked of wanting to die and at other times of getting married. Kept busy writing much of the time and said she was writing a play. Under treatment at home she seemed to be improving, but three days prior to her commitment she became much excited and restless.

At the time of admission she was much excited, hallucinated, confused as to her surroundings and without insight. She talked incoherently in a playful and affected manner but gave expression to no definite delusions. Many of her remarks referred to a certain gentleman friend. In July she showed marked negativism, and deep pin pricks in her body caused no reaction whatever. Hallucinations of both sight and hearing were very active, continuing so until the middle of October, when she became very destructive, obscene in her talk and untidy in her habits. She sang a great deal in a loud rasping monotone. For a short time cerea flexibilitas could be demonstrated and facial mannerisms were prominent. The latter part of that month she improved very rapidly, all the symptoms disappeared except certain of the mannerisms, and she developed good insight with complete recollection of all the experiences of her psychosis. She was discharged December 7, 1906, has worked regularly as a stenographer and typewriter since January 1907, receives $50.00 per month salary with good prospect of advancement.

Case X. No. 6973. Admitted June 7, 1906, age 27. Father, brother and a paternal uncle intemperate, the latter at

one time a patient at the Worcester State Hospital. Patient a normal child with average aptitude for study. Married at 19 and has one child 3 1-2 years of age. Following an attack of la grippe in March, 1906, which was marked by severe headaches, she was confined to the house for several weeks with "muscular rheumatism." She brooded over her incapacity and became depressed, often crying without apparent cause. She slept poorly, and early in May developed the idea that someone was going to burn her child. At times she refused to talk. June 5 she took a solution of bichloride of mercury with suicidal intent.

On admission she was restless, confused, negativistic and often assumed stereotyped attitudes. Within a day or two she became mute. She did not present evidence of hallucinations. This condition persisted until the latter part of July, when she commenced to show improvement in her mental state as well as in weight. November 24, as her condition had progressed favorably and she had good insight, she was permitted to go out for a visit. She returned to the hospital January 21, 1907, to renew her furlough and showed continued improvement, being finally discharged the following day. She has had no return of mental symptoms and has held her weight in spite of the fact that she does her house work and is also in business for herself as a milliner.

Case XI. No. 6990. Admitted June 27, 1906, age 17. Father died of tuberculosis, aged 46. Paternal aunt a patient at Worcester for three years but made a good recovery. A maternal uncle alcoholic. As a child the patient was nervous and suffered from nocturnal enuresis, but in boyhood he was much better and did well at school. Three months ago he began to lose interest in his studies, devoted much time to athletics and became greatly discouraged because he was unable to make the school baseball team. About this he talked a great deal. He was very restless, suffered from insomnia, and ate very little. June 26 he developed the idea that a crowd of people were following him. The next day he wandered aimlessly about the city until brought home by force and then refused to eat or drink, became mute and was destructive.

On admission he was quiet, refused to answer most questions, would not do anything for himself and at times resisted passive motion. He made a great many purposeless movements with his hands and showed evidence of hallucinations of sight, hearing and touch. Within three days following admission he became acutely excited as a result of the hallucinations, and continued so with short periods of remission until September. He was noisy, irritable, incoherent, restless, destructive and masturbated

excessively, the hallucinations often dealing with sexual subjects. Early in September he commenced to improve, developed complete insight and was stable. October 29 he went home on a visit, returning December 26 and being finally discharged the following day as he was in good condition. He has been interviewed frequently by the writer since his discharge and has not shown any abnormality. His mother writes that he has been constantly employed in the city forestry department and has never given evidence of a return of his mental trouble.

Case XII. No. 7075. Admitted August 19, 1906. Heredity marked, and general course of the case characteristic of dementia præcox, hebephrenic form. During the summer of 1907 she improved, showing good insight and an active interest in her surroundings and home affairs. August 22 she went out for a visit which did her good, returning September 7, and September 18 she was discharged recovered. April 15, 1908, she again returned to the hospital, her condition at that time showing progress in the course of her psychosis but no marked changes. She remained here until June 20, 1910, when she was discharged as not improved to enter a private institution. At present her relatives are caring for her at home, but her mental state is that of a case of hebephrenia in its more advanced stages.

Analysis of these twelve histories shows five cases—IV, VII, VIII, IX, and XII—which seem to belong in the dementia præcox group. Case IV with the prolonged catalepsy, the outbreaks of excitement and a long period of indifference, in spite of the final development of complete insight and a return of a normal mental activity, appears typical of the katatonic form. Case VII, presenting a long period of instability followed by an outbreak of excitement marked by hallucinosis and vague persecutory ideas, may be classed as a hebephrenic with the reservation that there is a definite basis of constitutional inferiority and that the recovery, while sufficient to permit her to gain her livelihood, cannot be considered complete. Case VIII, likewise showing certain physical evidences of an inferior individual, the instability and characteristic excitement, we would also consider as a hebephrenic who has recovered with defect. Case IX would hardly be placed in any other than the hebephrenic group in spite of the absence of the usual dementia præcox characteristics from the period prior to the development of the psychosis, and there certainly seems to be no evidence of defect at the present time. Case XII offers no difficulty whatsoever, but we must revise our opinion as to recovery at the first admission considering the apparently normal state then reported as but the commencement of what proved to be a relatively short remission.

As to the other seven cases there is in our own mind considerable question as to the diagnosis. Case I, while presenting delusions having a strong sexual coloring with active hallucinations of hearing, emotional instability and seeming negativism at certain stages, offers definite prodromata entirely compatible with those observed prior to a manic depressive attack, while the general clinical picture is not different from the so-called mixed cases of that group. There is no reservation as regard the recovery here. Case II must be classed as doubtful. There seems to have been a certain dementia præcox makeup in the patient evidenced in the reported instability quite pronounced during the interval between his arrival in this country and the commencement of the psychosis, but the difficulties which a foreigner meets during his early residence in a strange land are not to be lost sight of, and here again we have a definite cause for mental breakdown in the period of overwork reported in the anamnesis. The hospital history can be interpreted either as that of a case of hebephrenia or manic depressive insanity, but it seems to us that considering the short durations of symptoms suggesting hebephrenia we are safe in classing our patient in the latter group. Case V can be classed in the same way with less question, interpreting the period of dulness following the excitement as one of the reactions not infrequently observed in manic depressive insanity. Perhaps an exhaustion-infection psychosis cannot be entirely eliminated from consideration, but the confusion noted was not of sufficient intensity nor was her general physical condition compatible with such a diagnosis. Cases VI and X, however, seem to us frankly of this type, the apparent negativism being but an evidence of confusion of marked intensity and the relatively short hospital residence in both with coincident physical and mental improvement pointing strongly in this direction. Case XI offers some doubt, but the absence of a frank pre-psychotic dementia præcox trend, the fairly well defined cause and the course of his psychosis certainly makes manic depressive insanity the more probable diagnosis. Case III, while offering many symptoms characteristic of hebephrenia, for short periods during his hospital residence, cannot be kept out of that class of imbeciles of fairly high grade whose separation from the dementia præcox group is at times a matter of considerable difficulty. Here the subsequent history is of assistance and helps to place the case.

It will be seen from the above analysis that while the estimate of the condition of the patient at the time of discharge may be valid in the great majority of cases, the diagnosis may well be subject to revision, and a superficial review of the other histories in

our group of recovered case as well as in the total admissions for the three year period will not be out of place. Eighteen cases who were discharged recovered have received no special consideration for reasons noted above. Of this number five presented unquestioned evidence of dementia præcox, and in the case of three of these the statement of the condition at the time of discharge was later qualified as recovery with some defect. In four cases difficulties of diagnosis present themselves and make any definite classification impossible without further history either of the pre-hospital stage or that subsequent to discharge. Five can be placed in the manic depressive group without any question, certain symptoms having been given more than their true relative importance in first classing them as dementia præcox. Likewise two cases of late onset can better be considered as examples of that form of depression occurring during the period of involution and may also be placed in the manic depressive group if we are going to eliminate from our classification the term "involution melancholia." In the case of one of these the term "recovery with defect" was used with reference to her condition on discharge. Both are interesting because of their presentation of certain characteristic dementia præcox symptoms in psychoses occurring during the fourth decade of life. We do not deny them place in the dementia præcox group because of their age, for other cases occurring at that time of life have come under our observation, but the entire absence of the pre-psychotic instability or eccentricity which is always a factor in these cases of delayed onset determines us against such a diagnosis, while in each a strong tendency throughout life to periods of melancholy on insufficient provocation points strongly to the manic depressive makeup. Of the two remaining cases one diagnosed as the paranoid form of dementia præcox and presenting a prolonged course with well defined paranoid ideas not well systematized, with recovery at the time of discharge, may be classed with the group of cases best characterized as paranoid conditions. Her subsequent history bears this out, and there has been no evidence of dementia. She was able to conceal her delusions at the time of discharge, and we do not feel that her case can be properly considered in the recovered group but was purposely left there because deserving of special reference. The other was diagnosed as katatonia and made a rapid recovery, but careful study shows that the period of mutism and lack of interest which characterized the case was in reality a prolonged confusion and the etiological factors brought out are entirely compatible with those to be found in the exhaustion-infection psychoses.

Eliminating these 35 recoveries there remain 267 cases in

which a diagnosis of dementia præcox was made during the three year period. In our general review of these it has appeared that 27 can be placed in a group by themselves either as extremely doubtful or frankly to be classed as examples of other psychoses, basing such an opinion on the evidence of their hospital history subsequent to the making of the diagnosis. The number is not large nor are the errors at all remarkable when the multiform character of the dementia præcox complex is taken into consideration. A detailed reference to them would not add to the present discussion, but that such errors occur calls attention to the fact that more or less frequent revision of our diagnosis in this and other psychoses would give greater accuracy and add to our knowledge of psychiatry.

A glance at the above analysis will show that in but one or two cases has the post-psychotic period been considered, and in all the condition of the patient at the time of discharge has been taken as a criterion. We have approached the subject without permitting any preconceived opinion to play a part in the estimate of the results. To say that because a given case recovers it cannot belong in the præcox group seems unscientific, at least in the present state of our knowledge. Had we the same definite etiological and pathological factors to deal with as have been established for general paresis such an affirmation would be justified. But two of the cases, VII and VIII, of so-called recovery cannot be admitted because of a defect, apparent though not preventing the patient from gaining a livelihood, and in one, Case XII, it has already been shown to be but the commencement of a relatively short remission. The absence of the characteristic dementia præcox makeup, whether from the pre-psychotic or post-psychotic lives of the other two cases, IV and IX, is a factor of no small importance, leading us to be very skeptical as to the advisibility of offering them as examples of true recovery from dementia præcox.

That the diagnosis plays by far the most important part in an estimate of the prognosis has been the one outstanding feature of this discussion. It has the same place in the papers of Mitchell and Stearns[1] of the Danvers (Mass.) State Hospital, and Hoch and Whitney[2] of the Worcester (Mass.) State Hospital, read before the meeting of The New England Society of Psychiatry of September 28, 1911, both of which, dealing with groups of cases similar to that of the present paper, offer reasons for affirming corresponding errors of diagnosis among the group of recovered cases. Hans Schmid of Lausanne in an exhaustive study of the subject bases his estimate of the unfavorable prognosis upon the same consideration. He calls special attention to the frequency with which

the confusional states are mistaken for katatonic manifestations, a factor which has already been referred to in connection with three of our cases. Furthermore, in the interests of more accurate statistical data as to the condition of our patients at the time of discharge, Schmid insists on the necessity of as careful a study of the mental state at that period as at the time of admission, whereby the possibility of diagnostic errors would be greatly diminished. This seems to us in the light of the present study a point of no mean importance. Other European authorities, Klipstein,[4] Bleuler[5] and Kraeplin,[6] are entirely in accord with the views of the authors already mentioned, the latter stating his position as follows: "The contention that dementia præcox is curable in a scientific sense I hold to be hasty", while Bleuler puts the matter even more forcibly when he says, "There is no cure in the sense of *restitutio ad integrum*.' "

Therefore, basing an opinion on the results of our study of this series of commitments we should be extremely conservative in offering a favorable prognosis in dementia præcox. That a fair percentage of the cases may be discharged to their friends and for a considerable length of time be able under proper environment to occupy a useful place in society we would not for a moment dispute.

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V

THE SELECTION OF STIMULUS WORDS FOR EXPERIMENTS IN CHANCE WORD REACTION.

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This paper aims at contributing certain data to the *technique* of psychoanalysis by the association method of chance word reaction. The name here adopted for the method is the name given by Professor G. E. Müller; the method meant is the method exploited by Jung. The writers are taking for granted that the reader is somewhat familiar with the theory and practice of psychoanalysis, but their own method of procedure is described in detail below.* The conclusions here reported are the first gleanings from a mass of experimental results obtained in part at the Westborough State Hospital, in part in the Psychology Laboratory of Wellesley College, and in part in the South End of Boston.** More than half the experiments have been made and practically all the numerical work has been done in the last two months. When time permits, the results may be worked over from several different points of view, and even from the point of view taken in this paper they may be tabulated in several different ways. Here they have been submitted to rough-and-ready treatment in order that the writers might have the honor of contributing something to this collection of studies.

Every one who has tried out the method of chance word reaction knows that association times depend largely on the nature of the stimulus words, quite apart from the individuality and the history of the reagent. The purpose of this paper is not to show up this obvious fact but to point out the factors in the word stimulus which tend to make the reaction time long or short. The phrase, *word stimulus,* is used advisedly instead of *stimulus word.* This work is not a study of individual English words in the attempt to formulate a list thoroughly suitable for association experiments. It is rather a study of the associative behavior of certain groups of words. The words actually on the list are regarded simply as specimens of classes. Wells enumerates in order of their importance, four factors upon which the quickness of reaction depends in experiments of the sort under discussion. These factors are (1) "the tendency of the associations to be presented in linguistic form or in imagery readily resolvable thereto; (2) the relative pre-

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*See Freud, *The Origin and Development of Psychoanalysis, Amer. Journ. Psych.* XXI., 1910, 181-218; Jung, *The Association Method, Ibid.* 219-269; and Putnam, *On Freud's Psycho-Analytic Method and Its Evolution, Boston Med. and Surg. Journ.* CLXVI., 1912, 115-122.
For our own method of procedure, see p. 555.
**June and July, 1912.

dominance of some single association; (3) the willingness or unwillingness, from any cause, to utter the response word that presents itself; (4) such direct inhibitory effect upon all voluntary response as may be induced by any strongly emotional reaction to the stimulus words."* The work here reported centres about the nature of the stimulus word as likely to bring these factors and perhaps still others of minor importance into play. The study differs from earlier work, first, in the principles upon which the list of stimulus words has been made up, and, second, in the selection of four different classes of subjects.

The subjects included (1) six members of the Wellesley College Faculty; (2) twelve Wellesley students; (3) thirteen patients at the Westborough State Hospital, all women; and (4) six women who are free from any nervous disease but who are relatively uneducated. These classes of subjects will be called for brevity the *instructors,* the *students,* the *patients,* and the *uneducated.* The writers began the study by comparing the reactions of the insane with those of the sane as represented by the very available college undergraduate. This comparison seemed unsatisfactory because the students were much younger than most of the patients and far surpassed most of them in formal education. For this reason two other classes of normal subjects were added: (1) a number of formally educated women who more nearly resembled the patients in age, and (2) a number of women who more nearly resembled the patients in education.

The term *uneducated* as applied to the fourth class of subjects is, of course, an exaggeration. No one of the six is illiterate, and Cases II, III, and V are women of quick understanding and fair intelligence. Cases I, IV and VI, however, are decidedly ignorant. Only Case II has "gone beyond the grammar school", and even this subject had only one year of high school work. Case IV is a widowed seamstress, perhaps forty years old ; Case I is a vigorous housemaid of about twenty; Case VI is an ailing and idle girl of sixteen, the daughter of an intelligent restaurant waitress. Cases II, III, and V are all young married women; the eldest, Case V, must still be in her early thirties. Exact questions as to age could not well be asked of these subjects. It is clear that the "uneducated" subjects fall into a brighter half and a duller half. The reactions of Cases II, III, and V are scarcely to be distinguished, either in matter or in time, from those of the college girls. Cases I and VI, on the other hand, dealt in explanatory definitions (Case VI, in childish use-definitions) and Case IV persisted in seeking terms opposite to the stimulus words and was direfully slow in reacting.

*Wells, Some Properties of Free Association Times, *Psych. Review*, XVIII., 1911, 2-3.

The writers would gladly have extended the list of uneducated subjects, for experiments upon them proved highly instructive. Such persons, however, are extremely hard to secure. Subjects to whom English was not virtually the mother tongue were ruled out and many of the persons approached refused to cooperate (or to continue to cooperate) either as a favor or for pay. The recalcitrants evidently regarded the experiments as a species of the ever-to-be-detested school examination or as calculated in some mysterious way to get them into trouble. The very simplicity of the procedure made the proposal of the experimenters the more suspicious. Two of the subjects were finally secured through the kindness of the Emanuel Memorial House and two through the courtesy of Dennison House. Only in seeking these subjects did the writers meet with rebuffs. The patients and instructors selected were very willing and the college girls more than willing to serve.

In passing from the uneducated to the patients it should be noted that all of the latter exhibited more intelligence and better training than was shown by the more ignorant half of the former. In fact, Cases III, VI, VII, IX, X, and XII among the patients had all received more formal education than had any of the so-called uneducated subjects. No one of the patients had passed college entrance examinations, but Cases VI and VII showed a command of the English language and a range of reading much greater than the ordinary college girl can boast. Seven of the patients were, however, very fairly comparable with the brighter half of the uneducated subjects. The details in regard to the patients are as follows: Case I is an unmarried woman of thirty, depressed and perhaps suicidal. She has a very bad heredity as regards insanity and is morbidly conscious of this fact but has no marked delusions. Her reactions closely resemble those of the college students. Case II is a married woman of forty-three, much depressed. She believes that she has committed the unpardonable sin and talks freely about the matter. Her reaction times are irregular and rather long. Case III is unmarried and has held a commercial position. Her age is thirty-four. She is probably a case of dementia præcox and possibly has mental repressions. Her history bears out both these suppositions and her reaction times bear out the second. A peculiar feature of her reactions is the frequency with which she named particular things and instances, as, *e. g.*, *sofa—our couch at home, pride—a certain man.* Case IV is a married woman of thirty-three. The diagnosis is doubtful as between manic-depressive insanity (elated phase) and dementia præcox, but her reactions point toward the latter. She showed more instances of perseveration than any other subject ever encountered by either writer. Often her reactions could be

interpreted only by going back several numbers on the list of stimulus words. Often, also, her reaction was a word casually spoken by one experimenter to the other. It is to be noted that when the stimulus word was unpleasant, she nearly always gave the proper reaction for an earlier word. She also tended toward assonance associations and toward coining opposites to the stimulus words. *Roughness—ruffles, Roosevelt—rose,* and *weep—unweeped,* are characteristic reactions. Case V is a discouraged, neuræsthenic woman of fifty-one, unmarried. She has held a responsible commercial position and has carried heavy domestic burdens. She reacted with the same kind of labored explanatory definitions given by Case I of the uneducated subjects, and her reaction times were long. Case VI is a very intelligent unmarried woman of thirty-four, who has also held a responsible commercial position. She seems to be an hysterical case and lays claim to amnesias of the closely circumscribed variety. Case VII is an unmarried woman of thirty-three who has been a stenographer. She is a typical case of dementia præcox and shows the pitiful wreck of an excellent mind. Her reactions were nearly all definitions, but though fragmentary and marked by verbigeration in the repeated use of the words *lovely,* and *dainty,* they nevertheless hit the nail very exactly on the head. Specimens are *sparrow—a lovely, commonplace bird that goes in packs; star—comet, or on the stage, one that takes a heavy part and is dainty; garret* (taken for *gorrote*)*—torture;* and *Roosevelt—noisy man.* She usually continued to explain each stimulus word in lower and lower mutterings until the next word was given. Her reaction times were not long as compared with those of most of the patients. Case VIII is an unmarried woman of forty, likewise a stenographer. She exhibits a mild case of delusional insanity but is somewhat retarded and is easily fatigued. Case IX is thirty-five years old, is unmarried and has been a teacher. She is another clear case of dementia præcox and has religious delusions, not distressing but apocalyptic. Case X is a delinquent girl of twenty-four, difficult to manage even under hospital conditions and expert care. The diagnosis is uncertain as between dementia præcox and feeble-mindedness, yet her reactions are more rapid than those of any other patient on the list and could not be distinguished from those of the college students. Case XI is an unmarried woman of forty-eight. Her diagnosis is uncertain, but the most marked feature in her case is auditory hallucination. During the first experiments, which were made upon her last December, she rhymed incessantly and often senselessly, as, *e. g., puppy—luppy, lobster—clobster.* In June, however, when the experiments were finished, she rhymed very rarely and was much more composed in behavior, although she still complained of hearing the

accusatory "voices." Case XII is an intelligent well-to-do married woman of fifty-three, a typical case of manic-depressive insanity with remissions. Just now she is mildly exhilarated but shows some insight. Her reaction times exhibit the curious retardation which marks her psychosis even in its manic phase. Subject XIII is a married woman of twenty-eight and is a typical case of incipient dementia præcox.

The patients obviously make up a very heterogeneous group of subjects. However, their variations in the matter of reaction times from the standard set by the eighteen Wellesley subjects are not such as to cancel one another. Those who differ from this standard at all differ in the directions of retardation and irregularity; and Cases I and X, who do not diverge, serve only to lessen the gross difference in reaction time between the massed results of the patients and the massed results of the students and of the instructors.

Of the six instructors, whose ages range between fifty-eight and twenty-nine years, Cases I, IV, and V belong to the objective type of subject, the subject who reacts rapidly and mechanically without being stalled or side-tracked, by misplaced introspection and without taking the experiment as a kind of personal and perhaps inquisitorial conversation with the experimenter. In Wells' phraseology, these three reacted *freely*. On the other hand, Cases II, III, and VI belong to the subjective type. Case II was much too introspective. At the first sitting, she tended to react with assonance associations. Case III showed more instances of perseveration than did any other of the thirty-seven subjects except Case IV of the patients. Case VI showed some symptoms of a mental repression.

The students form a very homogeneous group and require little comment. One was a senior; the others were all juniors or sophomores; all were under twenty-four. Nearly all were of the objective type. It is interesting to note that of two who are particularly able and intelligent, one is very distinctly of the objective and the other of the subjective type.

The crux of this paper is the list of stimulus words. It seems desirable to proceed directly from the statement and discussion of this list to the discussion of the numerical results. The details in regard to the experimental procedure will, therefore, be interpolated at this point. The points which it is proper to mention are (1) the directions given to the subject, (2) the extent to which defective reactions were counted, and (3) the methods of timing the reaction.

(1) The subject was told to answer to each word pronounced by the experimenter with the very first word which came into her

head. She was *not* told to answer as quickly as possible. If she complained that she often "thought of" or "saw" one or more objects before she could think of a word, she was told not to worry about these visual "pictures" but to concern herself only with reporting the first *word.* The more intelligent subjects were told repeatedly that only honesty was required of them, not speed, and, much less, reactions of an interesting character. It was explained that a large number of remarkable reactions might simply be a proof that they were not doing as they were told but were "showing off". The less intelligent subjects were told even oftener that no "answer" was either "right" or "wrong", that one person would think of one thing first, and another, another. If they reacted with definitions, they were told several times over that they need not tell what the stimulus words meant, but as a matter of fact, with a single exception, no subject who once began to define could ever be stopped in this way. The untrained or dull mind seems to maintain a kind of groping attitude when the series of disconnected words is given, and admonitions are useless. For each subject the nature of the performance desired was, of course, illustrated before the experiments were begun.

(2) Reactions in the form of sentences, definitions containing several words and so on are, of course, contrary to the rules of the game, but if all such reactions were thrown out, the results from the less intelligent subjects would be meagre indeed. Definitions and assertions containing several words were, therefore, included if the experimenter thought that the interval between the giving of the stimulus word and the beginning of the reaction had been properly timed. Questions were, however, thrown out. In the case of the duller subjects, the experimenter tried to guard against taking an inquiring or meditative repetition of the stimulus word for the reaction proper. Often, however, the watch was stopped upon this repetition. The time obtained when this mistake was made should always have been thrown out. In some few cases, however, it was not, and this error tends to shorten the apparent reaction time of the duller subjects.

(3) In the experiments on the patients and the uneducated, the times were kept with a stop-watch reading to fifths of a second. One experimenter started the watch as she pronounced the stimulus-word, stopped it when the subject reacted and read off the time to the other experimenter, who did all the recording necessary. In the experiments on the students and the instructors, the time was kept with a vernier chronoscope. One experimenter pronounced the stimulus words and recorded the reactions and remarks, but not the times, which were not mentioned in the subjects' hearing. A second experimenter released the long pendulum of

the chronoscope on the stimulus word and the short pendulum on the reaction word, and counted and recorded the pendulum swings, afterwards computing the seconds from the swings. The procedures with the stop-watch and with the chronoscope are alike rough, but disregarding the inevitable errors, the time, which can only be read at most to tenths of a second with the watch, can be determined to fiftieths with the chronoscope. The great disadvantage in using the chronoscope is that it consumes time. After each reaction there is a halt while the pendulums are coming into the same phase, and this halt may be just as long if the subject reacts quickly as if he reacted slowly. A given set of experiments takes nearly three times as long if the chronoscope be used. For this reason, the watch was used with the patients and with the uneducated, with whom it was necessary to proceed quickly and whose variations were relatively gross.* The experiments on the uneducated and most of those on the patients were made by the writers together. All the other experiments were made either with the participation or under the very close oversight of one of the writers.

The principles on which the list of stimulus words was made up can best be explained to the reader after he has looked through the list itself, noting the interpolations in italics. Before giving the list, it is necessary only to say that half the words were designed to serve as a standard from which each of the other words should differ only in one or two respects. These standard words were not supposed to have in any marked degree any of the factors which are known to lengthen reaction time. When half the words were set up as a standard, it was proposed to find averages (with each set of subjects) for all the normal nouns, the normal adjectives and the normal verbs and to consider the time for the other nouns, adjectives and verbs as exceeding or falling short of these normal averages. In view of the actual results, however, this procedure was abandoned. The reaction times for the normal words differ so much among themselves that averages obtained from them would be meaningless. Thus the standard words simply

*In comparing the two procedures, it became clear that the error in such experiments would certainly be less if the person who pronounced the stimulus words were not the person who started and stopped the watch as is usually the case. In the first place, the experimenter starts the watch as he gives the word and not as the subject apprehends it, whereas an assistant will start the watch when he himself apprehends the word, and if both he and the subject are intelligent persons with good hearing, their apprehnsion times will be very nearly equal. In the second place, if one is supposed both to pronounce a word and make a thumb or finger movement at the same instant, the shifting of attention is likely to produce irregularities in the time relations of the two acts. Of course, in psychoanalysis proper, it is undesirable to have an assistant present, and small errors in the times matter little. Nevertheless, times taken in the ordinary way—as in our experiments with the patients and the uneducated—will appear a little longer and a little more irregular than if they were taken with the chronoscope as we used it. This fact is, of course, not sufficient to account for gross time differences, such as appear between the patients and the normal subjects.

serve as a kind of background or framework for the others in a fashion which will be clear later.

A CLASSIFIED LIST OF THE STIMULUS WORDS.

Standard Nouns, *all general terms of not more than two syllables. all likely to suggest stereotyped visual images, none very unpleasant and none practically equivocal in meaning.*

Parts of landscape:—river, star, cloud, rainbow, meadow, grass.

Parts of house:—porch, pantry, garret, kitchen, key-hole, cellar.

Parts of body:—wrist, knee, neck, ankle, tooth, flesh.

Articles of clothing:—ribbon, glove, jewel, shirt, bonnet, apron.

Textiles:—muslin, flannel, silk, wool, linen, velvet.

Articles of household equipment:—needle, sofa, clock, broom, kettle, hatchet.

Eatables:—lard, pudding, biscuit, mutton, salad, cookie; turnip, coffee, wine, custard, ginger, cherry; syrup, grape, cheese, fig, melon, gravy.

Animals:—goat, puppy, pig, squirrel, donkey, lion; whale, goose, panther, tiger, kitten, eel; robin, lobster, parrot, sparrow, eagle, pigeon.

Plants or parts of plants:—barley, ivy, moss, fern, clover, acorn.

Occupations:—farmer, plumber, priest, baker, grocer, druggist.

Poetical characters:—angel, gypsy, fairy, ogre, ghost, demon.

Standard Adjectives, *all expressing visible qualities but like the standard nouns not abstract, unpleasant nor equivocal in meaning:*—black, white, grey, red, blue, green; yellow, grown, pink, purple, crimson, scarlet; speckled, crooked, short, ragged, large, small; ugly, pretty, blooming, brilliant, foaming, flaming; fiery, dainty, narrow, neat, wide, lurid.

Standard Verbs, *all expressing visible actions or states but otherwise like normal nouns:*—quench, pierce, spin, carve, glisten, flutter; shake, fry, kindle, skim, eat, browse; prance, flit, fade, creep, cringe, shriek; bathe, spill, weep, hang, swipe, wipe; trouble, flinch, shut, chew, build, gather.

WORDS FOR COMPARISON.

Words likely to suggest unpleasant concrete (non-verbal) images but not likely to evoke any very strong emotional reaction:—blood, mucus, filth, slime, reptile, worm; vile, greasy, nasty, dirty, bleary, putrid; wriggle, writhe, drool, curdle, fester, reek.

Words likely to evoke unpleasant concrete images and also some indignant surprise and embarrassment in reacting:—stink, pus, slobber, bloat, vomit, urine.

Nouns equivocal in meaning (when heard):—tail, game, eye, poker, currant, soul.

Words equivocal in grammatical function—as often nouns as verbs:—whip, blossom, grin, gleam, lurch, frown. (See also the sets beginning with *splash* and with *envy* below.)

Words equivocal both in meaning and in grammatical function:—altar, medal, patient, bear, cross, tip.

Words abstract in the sense of not tending strongly to suggest some particular non-verbal image:—hatred, pride, grief, joy, terror, malice; envy, anger, shame, dread, love, disgust; virtue, fame, courage, future, beauty, truth; perplexity, ambition, intemperance, impudence, discouragement, disappointment; wicked, boastful, cautious, clever, silly, prudent; anxious, stupid, noble, crazy, morbid, jealous; covet, punish, obey, amuse, pretend, deceive; think, try, learn, forget, forgive, pity.

Words likely to suggest concrete images other than visual:—colic, headache, fever, roughness, voice, uproar; splash, whistle, shriek, tinkle, howl, whisper; sour, bitter, sweet, moist, hot, soft; slippery, fragrant, loud, spicy, heavy, rapid; mutter, patter, tickle, swear, freeze, crunch; beg, melt, speak, bellow, twist, scramble.

Nouns which differ from the standard nouns only in length:—molasses, chrysanthemum, geranium, rhinoceros, potato, radiator.

General terms likely to suggest subordinates:—fruit, fish, insect, bird, city, disease.

Proper names:—Taft, Lincoln, Moses, Bryan, Roosevelt, King George (counted as one word).

Postcritical words, coming directly after the words supposed to be "shocking":—tulip, daisy, poppy, pansy, lily, holly.

The reader's first impression from this list will be that it is very long, and if he reads it carefully his second impression will be that it contains an extraordinary number of stupid mistakes. For example, *vile* and *browse,* when pronounced are both equivocal in meaning, and the auditory images which *swear* evokes are verbal and not concrete. These errors, however, are of no real importance since, in the end, the results were not averaged in groups. The list is given here in its uncorrected form in order to indicate the composition of the shorter lists which were made from it at the outset before anyone had observed the very obvious errors. The complete list was divided into six short lists of fifty words each. These lists were closely parallel. It will be noted that on the complete list the words are arranged in groups of six or multiples of six. The first word in every six appeared on the first short list; the second on the second short list and so on. On the short lists the words did not appear in the order in which they stand on the long list, but in an order determined by writing them on separate cards and drawing the cards from the shuffled pack. The classification of the standard nouns was simply a device for making the short lists parallel, and has no particular importance.

To the students the six short lists were given at six different sittings, but to the instructors and the patients it was necessary to give two lists, and to four of the uneducated subjects all six lists at a sitting.

The characteristics of the stimulus words which the experimenters wished particularly to test are indicated on the list just given, but may now be enumerated with some comment.

(1) *Tendency to call up unpleasant concrete imagery, especially visual imagery.* May not such imagery so rivet the subject's attention as to hold back the verbal associate even though the subject may not have the slightest objection to uttering the first word which comes into his head? If one is given the word *blood,* may not the horrid image, say, of a stuck pig; make one for the moment really wordless and delay the utterance of the innocuous word *red* by perhaps a second? For the present purpose the words which tended to call up disagreeable pictures without shocking the subject are more important than the words which tempted her to withhold her really first reaction word. Every one knows what happens when a word is given to a subject to which for any reason he or

she fears to react. The "shocking" words on our list were put in to secure for purposes of comparison some instances in which our normal subjects would really hesitate to react candidly. These words, the set beginning with *stink*, may not seem to the medical reader very shocking, but with our subjects there can be no possible doubt that they had the looked-for effect.

(2) *Equivocal meaning.* If a word tends to initiate two or more series of associations, may not the two tendencies inhibit or partially inhibit one another? If one is given the word *guilt*, may not one react more slowly with the word *sin* because one has a fleeting image of a gilded object and tends also to react with *yellow* or *silver?* May not this inhibition take place even if the tendency to react, say, with *yellow* be not in any way represented in consciousness? Certainly the reciprocal inhibition of associations is a fact of brain physiology unmistakably demonstrated by the experimental study of memory.

(3) *Abstract nature.* If a word has no strong tendency to call up a definite and particular concrete or other visual image, does or does it not, in virtue of this abstract character, tend to have a long reaction time? Does the quick-coming visual image, which in most persons will antedate any verbal associate with such words as *kitten* or *cheese*, actually retard or facilitate the verbal reaction? If one spoke of piety as often as of pie, might not one react to *piety* more quickly than to *pie?*

(4) *Tendency to evoke concrete imagery other than visual.* The question of the relative suggestiveness of color words and of sound, taste and touch words, possesses a mild interest; but the point is of very minor importance, both because concrete imagery which is not visual, is relatively rare as compared with visual imagery, and because, even when it does occur with any degree of distinctness, it is commonly accompanied by visual imagery.

(5) *Length.* This is a point of considerable importance. If experiments are made in the ordinary way and if the experimenter starts the stop-watch as he begins to utter a long word, the reaction time, as registered by the watch, will certainly appear longer than if the word were short.

(6) *Grammatical value or function.* Do nouns, adjectives and verbs tend in the long run to exhibit differences of reaction time? One might well expect an affirmative answer to this question, since all kinds of linguistic connections and relations may be supposed to influence verbal reaction time.

These six questions are the only points of any importance which were taken into consideration in making up the list of stimulus words. The experimenters assumed that if a word is very commonly coupled with another word in ordinary speech, its time

will be short; this fact is amply demonstrated in the results, but was not a controlling factor in the formation of the list. From the results also emerge at least three other characteristics in the stimulus word which may have an effect upon the reaction time.

Before the numerical results are discussed it is necessary to interpolate two explanations in regard to the way in which they have been treated. On the one hand, when the average time for a given word with a given set of subjects is spoken of, the arithmetical average is meant. The median would scarcely represent the facts. But on the other hand, reaction times for different words have in no case been averaged together. For each class of subjects separately, the average times for the different words were written out in order from the least to the greatest, and the median value of the whole series, the median of each half and the median of each quartile were found. A word is said to lie in the first octile when its reaction time is shorter than the value upon which the line between the first and second octiles falls. For example, with the instructors, five words have a reaction time of 1.28 seconds and thirty-five words have a shorter time. The line between the first and second octiles falls, therefore, on the time 1.28″, since this is the thirty-eighth of the three hundred times on the scale, counting from the shortest, The word *molasses* is then said to belong to the first octile because with these subjects it had an average reaction time of 1.23″.

A word or two should be said in passing upon the relative quickness in reacting of the four different classes of subjects, although this is not a point with which this study is greatly concerned. The median value for the students is 1.53″; for the instructors it is 1.545″; for the insane, 2.58″; and for the uneducated, 1.945″. For the students the line between the first and second octiles falls at 1.30″; for the instructors, at 1.28″; for the patients, at 2.11″; for the uneducated, at 1.50″. The line between the seventh and eighth octiles falls for the students at 1.99″; for the instructors at 1.97″; for the patients at 3.50″; and for the uneducated, at 2.77″. Evidently the students and instructors are about equally quick; and although the uneducated fall between the insane and the normal educated subjects, they stand rather nearer to the latter than to the former. From scrutiny of the results for individual subjects it would appear that the retardation of the patients as compared with the students is really due to mental disease and neither to age nor very largely to lack of education. The retardation exhibited in the averages of the patients is due to two causes, namely, to the genuine retardation of the manic-depressive and the deteriorated subjects, and to the emotional disturbances which many of the words produced even in patients who

can scarcely be said to have mental *repressions*. For instance, Case II was long (nineteen full seconds) in reacting to *fiery*. Her reaction word was *indignation*. She thinks that she has committed the unpardonable sin. (See Hebrews 10:26, 27.) As a matter of fact, nearly all the patients were of the subjective type of subject, not in the sense that they were particularly introspective, but in the sense that they took the stimulus words personally.

The numerical results may now be discussed in their bearing upon the six questions which are primarily at issue and which controlled the selection of the stimulus words.

(1) *A stimulus word which tends to suggest unpleasant visual imagery tends to have a high reaction time, even if it is not likely to produce a true emotional reaction, but this effect is inconstant in comparison with the effect of words which do produce emotion.* For purposes of comparison the results for the shocking words will be stated first. As one might expect, the students and instructors were most perturbed by these words. All stand at least as high as the sixth octile. With the students, *stink, bloat, vomit,* and *urine* are all in the eighth, and *urine* has the fourth highest reaction time of all the words on the list (3″). With the instructors, *pus, vomit* and *urine* are in the eighth octile, and *urine* has a higher reaction time than any other word (3.18″). With the patients, *vomit* is only in the second octile, but all the other words stand at least as high as the sixth, and *stink* and *slobber* are in the eighth. Only five words on the list show longer times than these two words. The uneducated subjects were not phased by *stink* or *urine*, which stand near the centre of the scale, but all the other words stand in the seventh or eighth octiles. Turning now to the words which have unpleasant associates but are not likely to produce indignant surprise or embarrassment in reacting, one finds that *blood, slime, vile* (which is also equivocal in meaning), *greasy, bleary, putrid, wriggle, writhe, drool* and *reek* all have a well-marked effect, but *putrid* and *writhe* are the only words of the whole eighteen which are high for all classes of subjects, and *writhe* stands high probably because it is hard to apprehend by ear. With the students, only *blood, reptile, vile, greasy, putrid, wriggle, writhe, drool, fester* and *reek* stand as high as the sixth octile, and only *vile, putrid, wriggle, writhe, drool, fester* and *reek* are in the eighth. *Mucus,* to which the college subjects almost invariably reacted with *membrane,* is on the line between the first and second octiles, and *curdle,* to which every one reacted with *milk,* never with *blood,* is in the first. With the instructors, eleven of the eighteen words under discussion stand as high as the sixth octile. With the patients also the number is eleven, but with the uneducated only eight. With the different classes of subjects the make-up of the

lists of disturbing words is curiously different, and in many cases one can see exactly why a word should fail to disturb subjects of a certain class. *Drool* stood in the highest octile except for the uneducated, where it stood on the line between the first and second octiles. Three of these subjects are mothers of small children. *Mucus,* on the other hand, stood in the highest octile for the uneducated who did *not* react with *membrane.* With the instructors, only nine words on the list have a shorter time than *blood,* which with the other subjects stands in the sixth or seventh octile. The instructors all reacted with *red,* with the exception of one who said *serum.* On the whole, the results show that a moderately high reaction time has no particular significance if the stimulus word is likely to make a subject of a given class image something rather nasty. Nevertheless, an inspection of the results for individuals shows that retardations of this sort are really very different from the delays due to radical disturbances in the individual's emotional life. Delays of this second sort not only may occur in the case of words to which most subjects react promptly, but they are also much longer than the pause of trifling disgust or annoyance. The latter rarely exceeds by more than a full second the subject's median reaction time, unless there is embarrassment in reacting, and even then it rarely adds more than two seconds. On the other hand, the pause when the morbid emotion of a patient, hidden or otherwise, is tapped, has often, in our own experiments, lasted nearly twenty seconds, even when the subject finally reacted. The writers are the more anxious to record this impression because one of them has entered even into the outskirts of psychoanalysis in a highly skeptical frame of mind.

(2) *Equivocal meaning in the stimulus word does not appear to be a very important factor in raising reaction time; nevertheless, words of equivocal meaning rarely have a very short reaction time.* Of the set of words reading *tail, game, eye, poker, currant, soul,* all but *poker* fall with the students in the range from the third through the seventh octile. *Poker* falls in the first octile and was never taken as referring to a game. With the instructors, all stand as high as the fourth except *eye,* which falls in the second. *Game* alone stands in the eighth. The same kind of showing is made by the other classes of subjects and by the other set of words equivocal in denotation, the list reading *altar, medal, patient, bear, cross, tip. Medal* and *patient* alone stand high with all classes of subjects and *patient,* if taken in one sense, is abstract. Curiously enough, *cross* was never taken by either students or instructors in its religious signification and was taken thus only once or twice by the other subjects. *Tip,* which in no case stands higher than the third

octile, was commonly taken in the sense of *fee*. Very roughly speaking, the supposedly equivocal words which proved equivocal with subjects of a given class have long reaction times with that class. *Medal,* for example, was frequently taken in the sense of *meddle* and frequently in the sense indicated by the spelling. We may thus make the tentative inference that mutual inhibition between opposing associations may make itself felt in such experiments as these, but that usually, when a word is ambiguous, one association tendency is so much stronger than the other as to suppress it entirely. Nevertheless, words equivocal in denotation are not quite on a par with other words, and one cannot know beforehand how they will act with a given class of subjects. On the other hand, ambiguity as regards grammatical function seems not to make the slightest difference in reaction time. The words put into the list to test this feature are scattered all over the scale.

(3) *Words of abstract nature tend to have long reaction times, unless they are frequently coupled with other words in ordinary speech,* as *e. g., joy* is coupled with *grief,* or *forgive* with *forget.* The abstract words on the list may be roughly described for all classes of subjects as clustering in or about the seventh octile. Many of them stand in the eighth, but many of them stand as low as the fifth. Very few stand lower than the fourth octile except with the instructors, who have, of course, more fixed linguistic associations than any of the other subjects. The long reaction time of these words is certainly not due to rareness of occurrence. The standard nouns include many which are not in very frequent use, and the abstract words include many which are very common, yet the standard nouns centre below the median and the abstract words well above it. It is not because one so seldom mentions *ambition* or *discouragement* that one is so slow in reacting to these words. If the writers may judge from their own experience, the hold-up when an abstract stimulus word is given is really due to the lack of definite visual imagery. The word seems to stand alone in consciousness for an appreciable interval, whereas when one is given a word like *molasses,* one images, say, the fluid itself, and almost with the image comes such a word as *brown* or *sticky* or *jug.* It is true that very complex visual imagery may not readily lend itself to linguistic expression. If one is given the word *grocer,* one may "see" a shop and some half dozen different groceries before a single word will come. This is probably the point which Wells has in mind when he says that reaction time depends upon "the tendency of the association to be presented in linguistic form or in imagery readily resolvable thereto." Nevertheless, this halt produced by the thronging of visual images seems different introspectively and is actually considerably shorter than the delay which

occurs when visual images are absent or tardy. In one case, the field of consciousness seems crowded; in the other it seems vacant, and one finds oneself repeating "like an idiot" the stimulus word in internal speech. Perhaps Wells' principle should be rewarded, for the first image which joins the lonely image of a very abstract term is usually another verbal image.

(4) *Words which refer to sound, taste, smell, tactile or kinæsthetic experiences have rather long reaction times as compared with words which refer directly to visual experiences.* In the first place, the nouns in the set reading *colic, headache, fever, voice, uproar, roughness,* all stand above the median except *colic* and *fever* with the students (who almost invariably reacted *baby* and *scarlet*), *voice* and *uproar* with the instructors, *fever* with the patients and *voice* with the uneducated. *Headache* stands in the seventh octile for every class of subjects, although the word is not hard to hear and refers to a decidedly concrete experience. In the second place, except with the students, the adjectives in the list beginning *sour, sweet, bitter,* taken alone have a median which is considerably higher than the median of the standard adjectives taken alone. The standard adjectives, it will be remembered, refer to qualities which can be seen. The figures are as follows: Median for color words, taken separately: Students, 1.40″; instructors, 1.225″; patients, 2.185″; uneducated, 1.485″. Median for all standard adjectives, including color words: Students, 1.505″; instructors, 1.39″; patients, 2. 39″; uneducated, 1.67″. Median of the "concrete but non-visual adjectives": Students, 1.385″; instructors, 1.44″; patients, 2.67″; uneducated, 2.13″. This showing means more in view of the facts that such words as *sweet, hot* and so on readily suggest opposites and, therefore, have short reaction times, and that *lurid* has a long reaction time because many of the less intelligent subjects did not know what it meant (indeed two or three of the students did not). If one compares these sets of figures with the medians stated on page 561 for all the words given to each class of subjects. one finds, to be sure, that with the students and instructors, adjectives of all groups centre below the median. However, only the color words with the instructors and the non-visual concrete adjectives with the students have really short times. These groups stand respectively in the first and the second octiles. It would be rash to explain why the students are particularly quick with such words as *sour, hot, heavy* and the like. One should have more subjects and should treat the results in a different way before it would be permissible even to guess upon so delicate a point. With the patients and the uneducated, on the other hand, the visual adjectives centre below the general median and the non-visual, concrete adjectives centre above it. (No unpleasant words, however concrete, are in-

cluded in the class here taken into discussion.) With the uneducated as with the faculty, the color words, *red, blue* and so on centre in the first octile. With the patients, the color words centre in the second octile. It is curious that with the students they should centre as high even as the third.

(5) *Long stimulus words do not in any marked degrèe seem to have long reaction times in virtue of their length.* In other words, any retardation which may be due to the lengthening of the subjects' reaction time in the case of a long stimulus word is so slight that it can be masked by almost any of the factors which tend to shorten reaction time. Of the six words, *molasses, geranium, chrysanthemum, rhinoceros, potato,* and *radiator,* with the students, *molasses* stands in the first octile, *geranium* in the second, and *radiator* in the third, and only *rhinoceros* as high as the sixth. These results are representative, although with the other classes of subjects the order of the different words is different. Of the twelve students, seven reacted to *molasses* with *candy,* five to *chrysanthemum* with *yellow,* and five to *geranium* with *red,* but no such coincidences appear with the other three words. The tendency in the direction of a single reaction word *plus* the suggestiveness of a simple definite visual image is evidently quite sufficient to hide the effect of length. It must be noted, however, that the long *abstract* words do have long reaction times. These six words stand high as compared with the list of six reading *hatred, pride, grief, joy, terror, malice,* but not as compared with the abstract words at large.

(6) *Verbs certainly have rather longer reaction times than nouns; the case with adjectives is doubtful.* In discussing this point only the standard nouns, adjectives and verbs (throwing out *browse* and *flinch* as ambiguous) are considered as comparable. The medians for the standard nouns, taken alone, and for the standard verbs taken alone, are respectively as follows: Students, 1.45″; and 1.525″; instructors, 1.48″ and 1.625"; patients, 2.125" and 2.635"; uneducated, 1.83" and 1.87". This difference between nouns and verbs, though constant in direction for all classes of subjects, and therefore interesting, is not tremendous, and the writers are not expert enough in the psychology of language to attempt to explain it. The figures for the standard adjectives, which are the "visual" adjectives, have already been given (p.562). The students and patients are slower with the adjectives than with the nouns, but the uneducated and the instructors are considerably quicker. This particular line of cleavage makes the results difficult to understand, and since the subjects are so few, the point is not worth discussing. It should be remembered, however, that although in comparing one word with another we are dealing with arithmetical averages which may be distorted by the erratic results of one or two subjects, yet

when we are comparing one class of words with another, we are working with medians which are little affected by the extraordinary positions of a few individual words. One thing, at least, is clear from this study of grammatical function as affecting reaction time, and that is that verbs have longer times than either nouns or adjectives. It may be remarked in passing that with our subjects the great majority of the reaction words were nouns, even when the stimulus words were adjectives or verbs, although adjectives were more common as reactions to adjectives than as reactions to other parts of speech, and the case with verbs was parallel. On the whole, one may conclude that grammatical function should not be a matter of entire indifference in making up a list of stimulus words or in interpreting the results.

The six more important questions of this paper have now been discussed, but an examination of the results suggests several other points of interest which can best be brought out by considering the words which have, for each class of subjects, the longest and the shortest reaction times. With the students, of the forty words which stand at the top of the scale eighteen seem to owe their position to their abstract character and ten to their unpleasantness. Among these abstract words, however, are some which might have tapped emotion in some individuals,—as, *e. g., love,* which stands high only with this class of subjects made up entirely of young girls. Among the unpleasant words, moreover, are *reek* and *writhe,* which are hard to hear, and *vile* which is ambiguous. Of the other twelve words, four are certainly hard to hear; *lurid* carried no meaning to some of the girls, and *grocer* (taken for *grosser*) is ambiguous. *Taft,* which was the first proper name on the list, created a little surprise, and *ogre* was an unusual word in the girls' vocabulary. One cannot readily tell why the other four words, *shake, mutter, speckled* and *meadow* should stand so high, especially as nearly every one said *hen* for *speckled* and *green* for meadow. The five highest words in order are *boastful, ambition, drool, urine, bloat.*

With the instructors, the results are very similar as regards the probable causes of retardation. The five longest reactions are those for *urine, boastful, pus, flinch* (ambiguous) and *think. Shake* stands high here also but not *mutter, speckled* or *meadow.* With the patients the results are again parallel except that six words, *stupid, fiery, flaming, wicked, courage* and *patient,* undoubtedly owe their high position to their emotional effect on individual subjects. The five highest words are in order, *stupid, anxious, fiery, future* and *discouragement.* Unpleasant words come thick after these five, however, (*slobber* stands next) ; they are simply pushed down a little by the words which have peculiar associations for certain patients.

With the uneducated, the case is different. Of the forty words which stand highest, seven are unpleasant; eleven, abstract; one, (beside *vile*), ambiguous; one, the very first word to be given; two, hard to hear; three, words of uncommon occurrence, and three, general terms likely to suggest subordinates and, therefore, not so likely to suggest stereotyped visual imagery as the standard nouns. The position of the other twelve, however, can be explained only on the supposition that Cases I and VI found them hard to define and Case IV hard to match with opposites. *Jewel, glove,* and *pig* are instances in point. The five highest words, if we leave out the one which was the first to be given when the experiments were made, are *fame, anxious, whistle, glove* and *pretend.*

From an examination of the words with the highest times, two points emerge in addition to the six already made. In the first place, *words will have long reaction times if they are hard to apprehend by ear,* supposing, of course, that the stimuli are given orally. *Wool* stands high with all classes of subjects simply because it is hard to hear. Nearly every one reacts with *sheep.* The word is certainly not unpleasant and all the other textile words stand low. Instances might be multiplied if time permitted. It must here suffice the writers to advise other experimenters to avoid words beginning with *w, f* or *th* or ending with *m, n, f, th,* or *r* followed by a mute. Moreover, disyllabic words are distinctly easier to grasp than monosyllabic words.

In the second place, *words are likely to have long reaction times if they are unusual in the subject's speech life and must switch his associations into unwonted channels. Ogre* stands high even for the educated subjects, and on this point also examples might be multiplied. Of course, no rules can be given for avoiding words of this character.

Turning now to the words which have short reaction times, one finds that here the ruling principle is the second named by Wells, the predominance of some single association. In the majority of cases, the reaction word is a word commonly occurring in proximity to the stimulus word in ordinary speech. Very often, however, the reaction word denotes some outstanding visible quality of the object denoted by the stimulus word, as, *e. g., poppy—red.* Nevertheless, all-important as the association law of frequency proves itself in these experiments, one catches glimpses of another principle. *Some words seem to have brief reaction times because the imagery suggested is pleasant.* To bring out these facts, it will be sufficient to compare the ten or eleven words with shortest times for the four classes of subjects. These words are, in order, for the students, *scramble, fern* (pleasant), *purple* and *tinkle, cherry* and *curdle* and *hot* and *pigeon* (pleasant?), *needle* and *obey* and *short.* (The

words connected by *and* have the same time.) For the instructors, the list runs *bitter* and *kitten, small, black, crimson, green* and *short* and *sour, linen.* With the patients, the shortest words are *bonnet, geranium* and *Roosevelt, scarlet, fester* and *short, blue* and *clock, pretty* and *robin* (pleasant). With the uneducated, one finds *robin, green, purple, grape* and *kitten, bear, lion, blue, daisy,* (pleasant?) *shut* and *white.* The number of color words figuring in these lists is marked. Do those which have no opposites owe their position to the fact that they are pleasant? Among the color words *purple* and *crimson* have particularly short times, probably because they have two syllables and are thus easier to hear than the others. The flower words, *tulip, daisy, poppy, pansy, lily* and *holly,* stand low on the list for all classes of subjects, but little can be inferred from this fact since they are the post-critical words and stand severally directly after such words as *stink* and *pus.* The reader can readily see for himself that many of the words with the quickest reaction times have one or two word associations which predominate over all others. Note, for example, *scramble—eggs, tinkle—bell, cherry—red, hot—cold, needle—thread* or *pin,* and so on.

The writers have by no manner of means finished either the study or the presentation of the experimental results upon which this paper is based. The evidence even upon the points already made is a matter of detail and can scarcely be presented in a convincing fashion within the limits of this report. Nevertheless, from this cursory examination several suggestions emerge which may well be taken into consideration in selecting stimulus words for experiments in chance word reaction. In the pursuit of psychoanalysis this method has perhaps fallen somewhat out of vogue, but the more skeptical of the two writers wishes to record the impression that it is an excellent means of breaking ground.

In conclusion, the writers wish to thank all those members of Wellesley College who have assisted in these experiments either as subjects or as experimenters. They are especially grateful to Miss Josephine N. Curtis (M. A., 1912), Miss Cecilia Hollingsworth, 1912, and Miss Natalie Williams, 1913, for material help in the experiments, and to Miss Ethel Bowman, Instructor in Psychology, for most timely help given at the last moment in the tabulation of the figures.

VI

TWO CASES OF MULTIPLE SCLEROSIS WITH OBSCURE NEUROLOGICAL AND MENTAL SYMPTOMS (FORMES FRUSTES)

(PLATES XVII-XXVI)

By SOLOMON C. FULLER, M.D., HENRY I. KLOPP, M.D., AND MICHAEL M. JORDAN, M.D.

The cases reported in this paper seem to us of interest from at least two points of view: first the obscure neurological and mental symptoms which rendered a clinical diagnosis, if not impossible, certainly difficult; and, second, the rather prevalent opinion that multiple sclerosis is a comparatively rare disease in this country. The neurological symptoms in each of the cases were chiefly of the spinal type; but Case II, toward the end, presented symptoms of Cranial nerve, bulbar and cerebral involvement. Mentally one of them exhibited delusions of a paranoid trend and certain hysterical traits. In the other case, the almost constant clouding of consciousness, motor restlessness and temperature elevation suggested the picture of an exhaustion-infection psychosis, especially when the immediate antecedent history was taken into consideration.

With reference to the frequency of multiple sclerosis, well-known neurologists, such as Prof. Dana[1] of New York and Dr. Spiller[2, 3] of Philadelphia, incline to the view of a comparative rarity of the disease in America. But Taylor,[4] among those in this country who have given serious attention to multiple sclerosis, assumes a skeptical attitude as to its infrequency. He believes that many cases escape recognition, and more, that it "is a common, organic disease."

Aid in clinical diagnosis had been sought in each of the cases here reported, by consultation with neurologists and psychiatrists of wide reputation, who from time to time had visited the hospital. The correct diagnosis, however, had never been suggested: it was established only after autopsy. Among the possible conditions which had been considered, were hysterical astasia abasia, and possibly a luetic or tubercular meningo-myelitis, for the first case; and for the second, meningitis, meningism, meningo-encephalitis, meningo-myelitis, exhaustion-infection psychosis and "quasi systemic" spinal disease (Putnam-Dana type). The writers had favored the last mentioned, for reason of the associated secondary anæmia, spinal symptoms of motor and sensory character, extensive areas of bronze-like pigmentation of the skin, general muscular wasting—particularly in one of the cases—and the preterminal paraplegia in both of them.

In Case I, the "insular scleroses" were most numerous and most extensive in the spinal cord. In the medulla and pons these areas were not only rarely encountered, but were also very small, barely perceptible macroscopically. In the cerebrum of this case, none of the characteristic lesions were found. In addition to small blocks of brain tissue, sections were made on a microtome for whole brain sections, and stained for the display of fiber tracts; but the entire cerebrum was not sectioned serially, only the area limited by the anterior and posterior extremities of the corpus callosum. Moreover, the blocks were extremely brittle and complete sections were difficult to procure, so that an unbroken series, even for this area, was not obtained. In Case II, extensive and numerous lesions were shown in the spinal cord, medulla, pons and cerebrum, in the last mentioned region, some rather large lesions; and particularly were they present in the neighborhood of the ventricles. All of these disseminated sclerotic areas conform, in the main, to the classical descriptions of multiple sclerosis; and yet, as has been noted, the clinical symptoms, to say the least, were misleading. In the light of the completed histories, certain clinical data, perhaps, had not been given their due consideration.

It is far from our intention to present these two cases as evidence of the frequent non-recognition of multiple sclerosis, but rather as two cases with clinical symptoms that were certainly baffling, and which would have remained "innocent" of a correct diagnosis without autopsy. Incidentally, they also serve to call attention to the somewhat protean character which the disease may assume clinically, as exemplified in Case II.

The history of these cases is as follows:

Case I.—No. 7368, an unmarried women of forty-six years was admitted to Westborough State Hospital, April 12, 1907.

Family History.—Father died at the age of seventy-six from a cardiac affection; mother living, aged 82, but suffers from some form of heart disease which is not definitely described. Two brothers died in infancy of cholera infantum; one sister has pulmonary tuberculosis; four sisters and two brothers are living and enjoy fair health. A grandfather died at the age of 70, cause unknown; a grandmother at the age of 46 from "cancer of the stomach". One aunt was insane. All of the family are reported as more or less "nervous". Father and mother are first cousins.

Previous History.—The patient, seventh in a family of ten children, states that, as far back as her memory goes, she has always been a nervous person; that she had diphtheria as a child, when a young girl a sunstroke and once fell from a hay loft; that many years ago she had some "head trouble" and an ear affection; and that throughout her life she had been subject to frequent at-

tacks of tonsilitis. Menstrual function was established at the age of fifteen and a half years, but soon after ceased for about two months. At this time there was something the matter with her head and there was also a discharge from one of the ears. The character of the head affection was not definitely described; the discharge from the ear was evidently, from her descriptions, the result of middle ear disease; neither was associated with the sunstroke or fall noted above. Her knees, she says, have always been weak, and ever since her twelfth year she has experienced, off and on, "creeping sensations" in the lower extremities. Of late, these parasthesias have increased and she has had difficulty in walking. She has been treated at several sanatoria for these conditions but without any favorable result.

In 1890 she had a severe attack of influenza, and in 1894 typhoid fever and pneumonia. In 1899 she suffered what is described by the patient and her friends as a "shock", but there was never any loss of consciousness. This "shock", from the descriptions given, appears to have been a sudden culmination in an inability to walk. For some little time prior to this affair the parasthesias described above had been more severe; there had been also considerable numbness of the legs and feet, causing her to stumble frequently. Finally, one day while out for a walk she fell and could not get up unaided; when assisted to her feet she claimed an inability to walk without support, but this latter her friends had doubted. Ever since this occasion she has been afraid that she would fall and injure herself whenever she attempted to walk, and since then she has walked but little; in fact, soon after she ceased walking.

The mental make-up of the patient, her friends say, has always been vascillating, moody and reserved. Since 1891, a marked change in her disposition has been noted: she has been fault-finding, deceptive to her relatives, would not comply with reasonable requests, communicated her fancied grievances to strangers, wrote complaining letters to city authorities and to the officials of sanatoria at which she had been formerly a patient. On one occasion, before she ceased walking, she had attempted to run away from home and recently has wanted to jump from a window. She explained these actions as only attempts to get medicine for her illness which relatives did not provide, since none of them believed she was ill and all of them were persecuting her. She had been very bitter, especially against a brother. Lately she has become very slovenly in habits and untidy in her person. She has developed the idea that, in addition to the trouble with her legs, she has other serious diseases.

Here.—On admission, a poorly nourished, middle-aged woman,

5 ft. 4½ inches tall and weighing 75¾ lbs., presents a very striking bronze-like pigmentation of the skin of face, arms and anterior surface of the trunk and thighs. On the dorsa of the hands are leucodermic areas, some of these sharply defined by the pigmented areas, others less so. The rather elongated face, high cheek bones and the peculiar bronzing of the skin of the face suggest the features of an American Indian. She appears unable to walk without support on each side, even then the gait is ataxic. There is slight dorsal scoliosis, right. The heart's action is weak but regular and a faint systolic murmur is heard; pulse 80; respirations 24 per minute, prolonged expiration. The tongue is heavily coated, except for its borders, where it is very red; bowels loose, but no incontinence of feces or of urine. A blood examination reveals erythrocytes 3,000,000 per cmm. leucocytes 6,000, Hb. 45.

The pupils are equal, reacting to light and accommodation, although the left pupil reacts rather sluggishly to light. No sensory or motor disturbance of cranial nerves detected. Knee jerks elicited, somewhat exaggerated; double ankle clonus and a questionable double Babinsky; wrist, pectoral, jaw and abdominal reflexes active. The pharyngeal reflex is absent. There seems to be a rather general diminished pain and tactile perceptibility, particularly on the chest, over the mammæ, and the upper three-fourths of the back. Coordination tests are poorly executed. She complains of numerous paræsthesia of the trunk, abnorminal viscera and extremities, and also of almost constant pains in the legs and arms which she calls "neuralgia". She says she is chilly all the time, and that is the reason for being clad in three suits of heavy underwear, although it is mid April and the temperature is fairly warm. The speech is a little indistinct, something of a lisp, but in good tempo and without stumbling over test phrases.

Mentally she was without true insight into her condition; expressed delusions of persecution, chiefly against her relatives; and related various subjective symptoms which to her mind indicated clearly certain diseases—cancer of the stomach, large abdominal tumor, etc. Her general manner was somewhat affected and in many little ways her conduct suggested a bid for sympathy. When her stories of ill treatment did not arouse in the examiner a partisan feeling for her, and when certain special inadvisable favors were denied her, she became quite irritated and was just a bit abusive.

During the six weeks following her admission, she was constantly demanding of the nurses some attention, making no effort to aid herself when they were near but managing quite well when alone. Any failure to immediately grant her requests, whether reasonable or not, was at once spoken of as abuse from the hospital

personnel. She still retained the ideas of persecution on the part of her relatives, and while the disturbance in gait was no better, she had gained in weight, appetite was good and she was sleeping better.

Eight months after her admission, she complained that she could no longer move her lower extremities. An examination, however, showed that when each leg was lifted from the bed she could hold it up for quite a half minute before letting it fall, and when gotten up and assisted she could walk quite as well as on admission. Much to the astonishment of the examiners she did even better when walking backwards, but she apparently could not go alone. The legs were stiff, somewhat abducted, and in walking the gait was now distinctly steppage in character. The areas of diminished pain and tactile perceptibility were still present, and questionable anæsthetic areas were delimited on the anterior thoracic wall and on the face. Sometimes cold and warm stimuli were correctly differentiated, sometimes not. The knee jerks were extremely active and the reaction of the great toes to plantar stroking, the examiners concluded was a positive Babinsky reflex.

The patient's condition remained very much as has been stated for two years, when the bronzing of the skin, noted on admission, began to increase. Often these areas started as small brownish discolorations which did not exceed 2mm. in diameter, and rapidly extended to irregular areas 8 to 12 cm. or more, in their greatest extent. Leucodermic areas of the hands became more pronounced, and appeared also on the face, trunk and extremities. These leucodermic spots developed in the portions of the skin which had become pigmented, usually in the portion of the bronzed patch which was the first to become discolored, all of which imparted a distinctly piebald appearance. An examination of the urine at this time was negative for nephritis and also for glycosuria. The area of cardiac dulness was not enlarged; the heart sounds muffled and a faint hæmic murmur detected. Blood examination: erythrocytes 1,120,000; leucocytes 3,000; Hb. 20; many poikiolocytes; nucleated red cells encountered; few myelocytes.

The lower extremities exhibited considerable atrophy, particularly the left; still, there was general wasting of the entire musculature. Coordination of upper extremities was fair; incontinence of feces and urine had developed; and there was no longer any question as to paraplegia.

The patient died after a hospital residence of two years and five months, during the last six months of which she had steadily gone down hill, the last six weeks rather rapidly, having developed an extensive decubitus.

At no time were intention tremor, nystagmus, or scanning speech noted.

Anatomical Diagnosis.—Increased density of calvarium, anæmia of brain and meninges, pial opacity and edema, sulcus semilunatus on each occipital convexity, multiple focal degenerations of the spinal cord; hydropericardium, cardiac atrophy and degeneration of the myocardium, thickening of mitral and aortic cusps; t. b. of peribronchial lymph glands, anæmia of lungs: Glissonitis, anæmia and amyloid (?) degeneration of liver; anæmia and parenchymatous degeneration of spleen; hyperplasia of right adrenal; anæmic kidneys; bronzing of extensive areas of skin and numerous leucodermic patches; extensive gangrenous decubitus.

Case II.—No. 9523, a woman of thirty-three, and wife of a clergyman, was admitted to Westborough State Hospital, April 21, 1911.

Family History.—Nothing of importance is elicted in the family history as furnished by the husband and relatives of patient.

Previous History.—The patient is the second of five children and is reported to have been healthy as a child and up to the onset of the present illness, with exception of a severe attack of measles at the age of seventeen, from which she made a good recovery. She was a very affable person with a healthy attitude toward life. After graduation from high school, in 1900, she became the private secretary to the president of a prominent New England university, a position with not a few responsibilities, which she had filled satisfactorily until her marriage seven years later, October 1907.

After marriage she did her own house work. She had borne two children rather close together, the youngest now a year old. The last child was a heavy baby and the care of the two children had been especially trying, all the more so with the usual house work to do, for ever since shortly after the last lying-in period she had been without assistance. She never quite recovered her usual strength. All of the previous fall and winter she had been very tired, but had managed to keep her home in order and even indulged in considerable of the social life of the parish which, as the minister's wife, was more or less obligatory. About February 1911, the strain began to tell—she was begining to be nervous and depressed—but she kept up until March 1, when she had to go to bed.

She has gradually become helpless from loss of power in the extremities, particularly on the right side. At first, the intensity of the impairment seemed to vary, sometimes within a very short period. For example, one morning she left her bed to go to the living room, where for a few moments she stretched herself on the couch. When she got up to return to her bed she fell to the floor and could not get up unaided. She was not unconscious, for she called to her husband for assistance. He carried her to the bed and placed her on it, but a few minutes later she was able to get up

and walk alone. After this, however, it was noticed that she frequently stumbled and that the gait was becoming more and more awkward; finally she was unable to stand alone. She was constipated and the enemas given for this condition had to be siphoned off, there seemed to be insufficient power to expel them; the urine also had to be catheterized. A cystitis had developed which had been treated with autogenous colon bacillus vaccine, but apparently without good result. For the last week the stomach had become intolerant of food and she had to be nourished per rectum. Menses had been regular and had never been associated with much pain. Recently she has shown a considerable impairment of memory; she has been irritable; cried and moaned a great deal; and expressed a wish that she might die, but has made no attempt at self destruction. She has frequently appeared confused.

Here.—On admission, a fairly well-nourished young adult woman who unaided, apparently, can not stand or walk. An examination, though unsatisfactory, reveals the following: tachycardia but regular heart's action, no murmurs, no increase in the area of cardiac dulness; normal respiratory sounds. The tongue presents a heavy yellowish coating with a central, brown streak. She is constipated; and there is a constant dribbling of urine. No pathological alterations are detected in the abdominal organs. The uterus is retroverted and slightly prolapsed; there is some leucorrhœa, and the perineum is torn. The skin is without eruption, but she is decidedly dark, very little difference in color between the usually exposed and non-exposed parts.

The pupils are dilated, the left more than the right, and react sluggishly to light. She does not cooperate in tests for accommodation, in the determination of the field of vision, or in the attempt to examine the eyegrounds. There is apparently no defect of hearing, nor in the ability to discriminate between pleasant and unpleasant odors, or detect salt, sugar, vinegar and a bitter substance placed on the tongue. There is a hyperæsthesia of the gross tactile perceptibility but the finer epicritical touch could not be definitely determined for lack of cooperation. Moreover, she complained that the examinations were painful, constantly wincing and making protective movements excessively out of proportion to the amount of stimulus employed, and with it all a certain amount of rigidity was engendered, particularly in the lower extremities and abdominal muscles. Still deep pressure over the spinal nerve roots and over nerve trunks was not especially painful. She would not undertake the tests for coordination of the upper extremities, nor cooperate in the tests for muscle sense. All tendon reflexes could be elicited, most of them exaggerated. Ankle clonus, and Babinsky and Oppenheim reflexes were present on both sides; the abdominal reflex was not elicited; no tremors.

Mentally, she was depressed, and questions seemed to annoy her—she wanted to be left alone. During the first night at the hospital she was noisy, talking loudly almost incessantly. She complained of a great deal of pain in the abdomen and added that she wanted to die. She would throw herself from the bed to the floor, but always took the precaution to put the pillows on the floor just about where she expected to fall. She persisted in this at intervals up to about 2 a. m., when she was ordered placed in a dry pack to prevent injury. After she was placed in the pack she was very noisy the remainder of the night. The next morning she did not cooperate with the examiner—she still did not wish to be bothered. To most of the examiner's question she would reply, "I don't know anything", "Don't ask me questions like that", or, "Please don't; ask my husband, he'll know". She was apparently not oriented. She still did not want to be touched and she would cry out every time she was touched on the trunk or a tendon tapped with the hammer. At times, during the examination, it was doubtful as to whether or not she was delirious. For example, during the examination she said,"Andrew, will you pleose go away, you pretty nearly killed me". Andrew was not the name of any person present, nor so far as we could learn of any near relative or intimate friend. Again, "Father, please take me away, it's pretty near killing me. Take me away, it hurts me so. Oh! Take those stars away." Once she said, "I can't see, it hurts my eyes so. I can't breathe, it makes me sick", all of this interjected after reply to the question "Who am I," to which she had answered Oh! Don't touch me you hurt me so. Oh! I wish I were dead. "The whole push". Later on in the interview she again voluntarily referred to her eyes by saying, "It hurts my eyes so to look around".

April 27, 1911. Since the first night after admission, six days ago, she has made no further attempt to throw herself from the bed, nor has she been noisy, but she has been very restless in bed, constantly untidy, for the greater part of the time apparently unconscious, talking in a rambling and incoherent manner of old acquaintances and past experiences. She could be aroused at times from this apparently delirious state, but the attention could be held only for a few seconds. She did not pay the slightest notice to her surroundings, usually staring vacantly into space. The gastric intolerance reported on admission had disappeared, for she had taken a liberal amount of liquid nourishment which had been retained. The hypersensitiveness to touch which in many respects had simulated a central neuritis, had also disappeared, or at least she submitted to examinations requiring manipulations without protest. The skin of the abdominal wall, from a point on

level with crest of ilia to about level of lower border of sternum, and laterally extending to the axillæ, presents a pigmentation, brownish with yellowish flecks, which does not appear to be the result of bruises. Within the pigmented area there is also an area of leucoderma extending along the lower border of the ribs on the right side. The pupils are dilated and unequal, the left larger than right; both very sluggish to light. The eyegrounds could not be examined for lack of cooperation; there is a conjunctivitis of the right eye with injection of the lower half of the cornea.

May 6, 1911. Until yesterday there had been but little change in her condition, as described in the last note, except that high enemas had brought about less frequent involuntary defecation, when she suddenly became much worse, developing a temperature of 102.2 F, pulse 130, respirations 24. She was quite noisy, calling out loudly certain numbers, sometimes in a stereotyped manner, sometimes without any order, her right arm in the meanwhile constantly in motion while the left arm was flaccid at her side, as though paralyzed. Babinsky and Oppenheim phenomena, which heretofore could be elicited on both sides, could now be demonstrated on the left side only. Moreover, all tendon reflexes were much more active on the quiet left side. Whether or not this was due to a certain amount of resistance of the actively moving right arm could not be definitely determined, but it did not seem so. The temperature at midnight was 103.2 F., pulse 124, respirations 24; at 6 a. m. this morning 101.6 F., pulse 129, respiration 24; and at 9 a. m., 102.2 F., pulse 130, respirations 24. The heart's action is very weak, the first sound very distant.

May 8, 1911. There is some slight improvement. The temperature is lower, 100.8 F.; it has been as high as 103.6. Both sounds of the heart are heard distinctly, she is less noisy and talkative and the clouding of consciousness is less profound, that is, she can be more frequently aroused for short periods. When her husband visited her today she answered two or three questions, which he asked her, in an orderly manner and appeared to recognize him. She lies with her head thrown backward and the back slightly arched, but there is no resistance to passive movements of the head or extremities. Yesterday the pupils were equally contracted, about 2 mm. in diameter. Today they are widely dilated and equal. There is slight nystagmus of the eye globes. The tendon reflexes on the right side are very active, those on the left side much less so, just the reverse of what has been previously noted.

May 13, 1911. Since the last note the temperature has oscillate between 101 and 103 F. A test for the Widal reaction, made today, is negative. Blood count: erythrocytes 4,000,000, leucocytes 13,000, Hb. 50.

May 25, 1911. The temperature registers 100. 4 F. Clouding of consciousness persists. She is almost constantly making aimless movements in the air with her upper extremities, the hands firmly clenched meanwhile. The lower extremities are flexed and well drawn up, but there are no contractures, since they can be straightened without any resistance, but she gradually flexes them again. The toes of the right foot are now and then flexed or extended voluntarily. There is little or no reaction to pin-pricks anywhere on the lower extremities, but she draws away when the trunk, arms or face are pricked. She resists passive movements of the arms. The knee jerks can not be elicited; hitherto they have been very active. Babinsky phenomena is present on the right side, a very questionable reaction on the left. Oppenheim reaction present on right side, none on left. She either moves her lower jaw from side to side, or calls out loudly certain letters or numbers, for example, "P. R. TH. K. 12. L. K, a part of it too. 21. K. S. LL. K. K. S. L. 21. K. O. Y. Z. Z. F. L. L. T. Y. S. S. O. O., etc. Occasionally these are interspersed with the following phrases: "24th case suddenly", "23 case, remember, case suddenly". "Wont you tell me?" "For Ma's sake suddenly". "K. A. suddenly represents the first word suddenly, A. Z. O. plus Y., his word is always important", etc.

May 29, 1911. At about 6 p. m. of this date she had a general convulsion which lasted about two minutes.

May 30, 1911. She is very restless, keeping the arms moving constantly, picking at the bed clothing or waving them in the air. She is also very talkative in much the way as noted above, "practical, compromising, retroside, stranger". "The frat word bothers me, occasion would say fraction now", etc. Diarrhoea and constipation have alternated for the past week or more.

May 31, 1911. The patient was noticed for the first time to move the lower extremities freely from side to side and to lift them from the bed.

June 2, 1911. She remains much the same, temperature fluctuates between 101 and 102 F.

June 7, 1911. At noon today the patient had clonic spasms of the right arm and left leg. At one o'clock there was another convulsion, during which the mouth was drawn to the right, the tongue in active motion but not protruded, the right arm and shoulder muscles, the right leg and foot convulsed. The left side was not involved. After the convulsion, which lasted about two minutes, the tendon reflexes were very active on the left side; elicited with difficulty or not at all on the right side. After this there were two other seizures before 2 p. m., of the same character. At 2.30 p. m. convulsive movements less than a minute's duration

were confined solely to the right side of the face. Between 3.30 and 4.15 p. m. there were several attacks, some of them with right facialis phenomena alone, others with right side convulsions of the entire half of body.

June 15, 1911. No further convulsions have been observed since the last note, but the patient's general condition seems worse; she is almost constantly delirious and the cystitis is decidedly worse. For this condition autogenous colon bacillus vaccine is given and irrigations of the bladder. She has to be tube fed.

July 1, 1911. There is some contraction of the lower extremities, more marked of the left. Passive movements of the knee joints attended with great pain to patient. There is less incontinence of bowels.

July 28, July 30, 1911. The hospital masseuse reports a fixation of not only both knee joints, but also of both hip joints. Extension treatment by means of graduated weights was begun. A bed sore has appeared over the sacrum. There is some slight diminution in the amount of pus in urine. The temperature, never below 100 F., has begun to rise again. A blood count shows the following: erythrocytes 3,000,000, leucocytes 17,500, Hb. 35; no pathological forms of red cells suggestive of pernicious anæmia. The pigmentation noted above is more intense and more diffused, most marked on the face and hands. Up to two days ago she had been treated in bed on the verandas, and whether or not this has been responsible for the more intense pigmentation of the hands and face it is difficult to exclude, but the non-exposed parts of the body have also become darker. The tendon reflexes and neurological symptoms still show a tendency to vary, now present on one side, now absent.

July 29, 1911. About midnight, last night, after a day without unusual symptoms, the physician was hurriedly summoned. Finding the patient almost pulseless, face livid, apparently choking and lying on her back with head and eyes turned to the left and with widely dilated pupils, artificial respiration and hypodermatic injections of whiskey were employed. After five minutes, respirations became normal and the pulse was better. Towards morning she had a similar but less severe attack.

There is a rather pronounced brownish pigmentation of the skin, most pronounced on face.

Aug. 1, 1911. Symptoms of bronchitis; considerable mental confusion; motor restlessness. The bed sore noted above is extending, others are appearing. Diarrhoea with frequent greenish yellow movements; urine still purulent.

Aug. 8, 1911. She is noticeably weaker; pulmonary consolidation, both sides. At 3 p. m. choking attack as described above for

July 29. She was almost pulseless but responded to hypodermics of brandy and Strych. sulph. 1-30 gr. Again at 8 p. m. inability to swallow; temperature 103 F.; pulse 146; respirations 50; profound unconsciousness.

Aug. 9, 1911. Death at 11.48 p. m.

Autopsy 10 hours post mortem.

Anatomical Diagnosis.—Increased density of calvarium, tense dura, edema of pia, small focal areas of pial opacity, anæmia of brain, grayish-pink focal areas in white substance, particularly in neighborhood of ventricles and also involving portions of gray substance of cortex, and in basal ganglia (*sclerose en plaques*), anæmia of cord, diminished consistance, multiple grayish-pink areas involving sometimes white substance alone, sometimes gray substance also, and missed altogether in other segments; acute degeneration of myocardium; acute pleuritis, double lobar pneumonia; hypertrophy of spleen; anæmia of spleen; enteritis; anæmia of kidneys, purulent cystitis, uterine retroflection; decubitus.

Microscopical Examination.—The chief features of the stained sections are the multiple areas of disseminated sclerosis within the central nervous system and their indiscriminate distribution. The descriptions, therefore, will deal chiefly with these areas. Of the body tissues, we would call attention to the hypertrophic adrenal mentioned in the anatomical diagnosis of Case I. The size and shape of the adrenals in cases coming to autopsy at Westborough have been found to be variable without altering in any essential manner the histological components of the glands. In Case I it seems, we have only a simple hypertrophy of the suprarenal. The parenchymal cells stain well and offer no marked alterations, except in those portions where there is usually an abundant fat content, these sections exhibit little or none. The pneumonic process in Case II had reached the stage of gray hepatization.

Pia.—In Case I, the pia exhibits a moderate proliferation of connective tissue fibers and large endothelial cells, some thickening of vessel walls, edematous distension of the connective tissue fibres and in some areas comparatively large masses of yellow pigment deposited free in the mesh. There are no infiltrative phenomena. The pia of Case II shows much the same condition except in certain areas—areas of focal opacities mentioned in anatomical diagnosis—where there is a moderate lymphocytic and *Abraumzellen* infiltration.

Cortex.—In case I, the sections of the cortex, from blocks fixed in alcohol and stained with toluidin blue after Nissl, offer little that is of significance. There is an increase of glia nuclei which is rather general in its distribution, and ganglion cell atro-

phies, cells which stain rather deeply. Many of the Betz cells show a rather marked central chromatilysis, with displacement of the nucleus to the periphery or complete extrusion. When the former condition exists (peripheral displacement of nucleus) the cell appears swollen; when the latter (nuclear exclusion) it is shrunken. Interesting in this connection is the appearance of such cells in Bielschowsky silver impregnated sections. In the chromatlytic areas there is a decided tinging of the interfibrillary substance and ill defined and swollen, or complete disappearance of fibrils within the area, while the remaining fibrils of the cell show good preservation or at most beginning rosary formation. (Fig 6). There is slight, if any, progressive alteration of the vessel walls, but occasionally one sees regressive changes of the endothelium of cortical vessels and in some of the larger calibered vessels pigmented macrophages within the adventitia. Infiltration of the perivascular spaces with plasma, lymphoid or mast cells, fails completely in all of the sections examined. Throughout the cortex, particularly in sections from the central gyri, large glia cells with abundant protoplasm are more frequently encountered than is usually the case with vascular changes no more severe than are here shown. In the white substance, these glia and vascular changes are more pronounced, but even here the process can not be considered as extreme. Mann and acid fuchsin-light green stained sections, after Weigert's glia mordant and Flemming's fixative respectively, add little to what has already been described for the cerebral cortex of this case.

In Case II, the cortex is replete with changes which may well be considered as acute, but there are also changes, of the nervous apparatus at least, which may just as well be interpreted as chronic—ganglion cell atrophies—and likewise of the mesoblastic apparatus—progressive-regressive vascular alterations, and vessel proliferation. The acute histopathological changes, however, dominate the microscopical field. In alcohol fixed material stained with toluidin blue, many large glia cells with abundant protoplasm and numerous processes are encountered. The nuclei of many of these cells are seen undergoing direct division. Other large cells with a small darkly staining nucleus which is usually eccentrically placed, presenting a considerable protoplasm of net-like structure, are also seen. These cells ar either round, oval, or somewhat saddle-bag shape, and are usually found in groups. Occasionally one encounters a fairly well circumscribed area of from 1/8 to 3/4 of the field of a low power lens in which only a few darkly stained and atrophic ganglion cells are shown, sometimes with and sometimes without the large cells last described, the intercellular structure of the whole area presenting a distinct, relatively coarse-meshed

appearance. These areas in Nissl specimens and also in Bielschowsky sections present much the appearance which Fischer has described and illustrated as *spongiöser Rindenschwund.* But in material fixed in Weigert's glia mordant and Flemming's solution, and stained with Mann's eosin-methylene blue mixture, Mallory's phosphomolybdic hæmatoxylin and fuchsin-light green they are shown to be none other than minute microscopic areas of "insular sclerosis", Figs. 7, 8, for they present the histological characteristics shown in the larger macroscopic areas of multiple sclerosis found in the cord and other regions which are to be described later. These minute areas, as well as the groups of large cells, are more common in the white substance than in the cerebral cortex. As to theii regional distribution in the cerebrum they were more frequently seen in blocks from the lips of the calcarine fissure, the central gyri and paracentral lobules.

In Weigert myelin sheath preparations of large sections of the cerebrum of Case II, and transverse sections of pons, medulla and spinal cord of each of the cases, macroscopic areas of "insular sclerosis" are frequently exhibited. These areas, as in the classical descriptions, follow no definite fiber tracts, and affect indiscriminately gray and white substance. Figs. 1, 2, 3, 4, 5. In the cord, very striking is the manner in which one segment may be involved, perhaps on one side, or both, and in the very next segment, it may be, the opposite side would be affected or perhaps the whole segment escape altogether. In the cerebrum the involvement of fibers in the neighborhood of the ventricles, particularly the lateral ventricles and also the 4th, was very common in Case II. The involvement of the spinal cord in Case I was just as extensive as in Case II, large lesions ceasing abruptly at the medulla, only very small lesions, barely perceptible to the unaided eye, were seen in the medulla and pons, and none were found in the cerebrum, not even microscopic areas and that, too, with the more refined methods such as Mann's stain and acid fuchsin-light green. In Case I, the lesions in the lower half of the cord were less indiscriminate in their distribution and more "quasi systemtic" in character. Fig 1. When the multiple sclerotic areas are examined in sections stained by the methods last mentioned and by Weigert's glia method, it is readily seen that there is a massive proliferation of glia fibers and, save at the periphery of the lesions where glia fibres are less numerous, axis cylinders are very rarely found, in some of the older patches none are shown. Always within these areas, most numerous in the peripheral portions, but also where glia fiber proliferation is pronounced, are certain large cells of phagocytic character which have been already mentioned. Figs. 8, 9, 11. These cells are commonly referred to in descriptions of multiple sclerosis as "compound granule cells" and are

also to be found crowding the perivascular spaces of blood vessels in the vicinity. Fig. 10. These cells we believe to be chiefly of glial origin,* despite their presence in the walls of vessels. Not infrequently an axis cylinder may be seen in cross section in the protoplasm of such a cell or an axis cylinder with myelin sheath still intact either completely or in the process of being enveloped, by an indentation at the periphery of the protoplasm of the cell, or an extended and slightly curved pseudopod; occasionally even an amyloid body. Fig 11. In fuchsin-light green specimens certain bright red granules (inchsinophile granules) are seen but not in great number nor in all of the cells (see Fig. 9) and also with Mann's stain certain blue granules which do not appear to be identical with the granules just mentioned. Amyloid bodies are not only frequently seen in the sclerotic areas, but also in the other areas of the cord. In Case II they were also found in the cerebral cortex and white substance, though less frequently. The clear round spaces or holes so frequently mentioned by authors, are shown to be residuals of these large cells which have disintegrated, and rests of the net work of the protoplasm or even of the nucleus may be made out in the specimens stained with fuchsin-light green. Fig. 11 Attention would be called to the condition of the optic commissure as shown in Fig. 4. It is seen that, except for a narrow rim, there is almost a complete destruction of myelin sheaths. It is possible that the pains complained of in the eyes clinically may have been due to this condition, and it is also probable that a greater impairment of vision existed than was apparent while the patient was alive.

The anatomical changes which have been described, we believe, prove that these cases properly belong to the clinical group known as multiple sclerosis (*sclerose en plaques,* "insular sclerosis") and although clinically not corresponding to the classical type are best grouped perhaps, with the so-called *formes frustes* under which Redlich[5] Taylor[6] and Charcot[7] believe more cases course than under the classical type of Charcot.

From the standpoint of etiology, assuming that the previous histories as recorded give all of the essential facts, then, for Case II a great rôle must be assigned the puerperum, for there is little

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*This view of the nature of these large cells is the result of much reflection. For quite a long while we had considered them as *Abraumzellen* of mesodermic origin which Merzbacher describes (*Nissls u. Alzheimers* Arbeiten, Bd. 3, p. 1, 1909), and it may be that such they are. To be sure they are much less numerous in the older lesions where there is considerable glia overgrowth than in the younger lesions where glia fibre proliferation is scant, but there are few lesions, either in the brain or cord, which are altogether free from such cells. Moreover, in recent as well as in old lesions, they are most numerous at the periphery. It is just at such points that one is most likely to encounter a reactive cellular gliosis. As shown in Fig. 11, one sometimes find them including not only axiscylinders with their myelin sheaths, but also amyloid bodies. Their presence in the perivascular spaces of nearby vessels is not inconsistent with their glial origin. Alzheimer has recently and convincingly shown that certain type of glia cell may be found under certain conditions within the perivascular spaces of blood vessels. (Nissls u. Alzheimers Arbeiten. Bd. 3, p. 401, 1910.) See also A. Jakob., Nissls u. Alzheimer's Arbt. Bd. 5 pp. 1-182, concerning the type of *Abraumzellen.* This paper we learned of after ours had gone to press. The views are much the same.

else to which an etiological factor can be attached—a causative factor frequently noted in the literature. The rapidity with which the case developed and its constantly progressive character while in hospital, classes, it, if not acute, at least as of subacute character. With Case I, while chronicity is evident, going back to the twelfth year, the etiology may not be disposed of so readily. We have in the fall from a hay loft many years ago, together with the long-standing paraesthesias and frequent attacks of *angina tonsilaris,* the possibility of a traumatic as well as an infectious origin. While trauma and infection have each been assigned as factors in the etiology of multiple sclerosis, the latter has aroused considerable discussion, good observers being found as proponents and equally good observers as opponents. As to trauma, Redlich[5] advises caution in assuming this as an etiological factor, although believing it is the cause in some cases. We would mention in this connection the case of a young man, still a patient at Westborough, who developed the symptoms of multiple sclerosis following a fall from the roof of a shed to the court yard, a distance of about 20 feet. He was admitted to hospital when nineteen, about five years after the accident, and has been in hospital for about four years. At present he exhibits all of the classical symptoms of multiple sclerosis, but at first and for about a year after admission he was considered a case of dementia præcox.

The gait in Case I showed, in addition to the motor symptoms which were described in the record, an ataxia. In view of the question which some raise as to whether or not the ataxia exhibited in such cases is to be interpreted as a sort of intention tremor, this observation in Case I seems to us of interest. But we do not take sides, since the observation was recorded only in the early part of the history and not noted subsequently. In Case I, sensory symptoms—pain, paræsthesias, chilliness and anæthesias, were frequently complained of. In Case II, the tenderness to touch which suggested a central neuritis was quite prominent for a short while, but diminished pain sensation in lower extremities was rather continuous, or at least so appeared, the frequent clouding of consciousness rendering an accurate determination impossible.

Finally, we could call attention to the psychical disturbances of multiple sclerosis as exhibited in these two cases and two others which we have observed at Westborough. To be sure, mental disturbances, as appearing among the clinical symptoms of multiple sclerosis, have been noted by a great number of observers; even Cruveilhier[9], who first described the disease, mentions them. In literature, all grades of psychical disturbances are recorded, from an abnormal tendency to write poetry (Valentiner[10]), to acute mania (Lewis[11]), confused and excited states with hallucinations

(Redlich[12]), *"paranoia persecutoria"* (Bruns[13]) and "complete dementia". (Church and Peterson[14]). Most frequently, however, intellectual defecit, and uncontrollable laughing and crying are mentioned. As to uncontrollable laughing and crying, Oppenheim has stoutly maintained that these can not be interpreted as mental symptoms, since they are not associated with sad or joyful moods. Muller[15] in his admirable mongraph, while noting that 25 per cent of the cases exhibited mental symptoms, states that psychical disturbances were not especially marked, and showed little that was characteristic. Spiegel[16] contends that mental symptoms have no place among the characteristic clinical symptoms of multiple sclerosis.

While we do not claim to have read all of the contributions to the literature of multiple sclerosis, we have perused a great number, and with few exceptions, notably Raecke[17] and Redlich,[18] the psychical disturbances associated with the disease are lightly passed over. The two cases reported in this paper and two other Westborough cases mentioned above were committed to hospital primarily for their mental condition. It is, perhaps, possible for a patient to suffer a psychosis independent of a simultaneous affection of multiple sclerosis, but we believe that the psychosis in Case II and the young man mentioned above, perhaps, also, in Case I, is attributed in large part, if not solely, to multiple sclerosis.

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EXPLANATION OF PLATES.
(XVII-XXVI)

Fig. 1.—Illustrating sections from pons, cervical and thoracic levels of spinal cord, Case I. Myelin sheath stain. The cord lesions are sharply delimited; in the pons, some are clean cut, others diffuse. Zeiss series Ia.

Fig. 2.—Medulla and cord sections, Case II. Technical and photographic details as in preceding legend.

Fig. 3.—Upper portion of pons, Case II. Photographic details as in pons section of Fig. 1.

Fig. 4.—Coronal section taken just behind the anterior commissure and passing through the optic chiasm. Note the sharply circumscribed degeneration of fibres in the chiasm, stalk of infr. and supr. temporal gyri and amygdal, and also of internal capsule, right. Photograph actual size.

Fig. 5.—Section passing through thalamus, middle commissure and posterior portion of putamen. Note the degenerations around anterior horns of lateral ventricles, in cornu Ammonis of each side and stalks of hippocampal gyri, antr. nucleus of thalamus and of blade of forceps of same side, right. Photograph actual size.

Fig. 6.—Betz cell anterior central cortex, Case I. The cell is stained after the Bielschowsky method for neurofibrils. Note dislocation of nucleus to periphery, disappearance of the central neurofibrils with dark tinging of interfibrillary substance in this region while the peripheral neurofibrils are fairly well preserved. The illustration as here shown is the equivalent of the central chromatolysis and axonal reaction of the Nissl stain which were shown in this case. Zeiss 2 mm apochromat obj. projection oc. No. 2, bellows extension 90 cm.

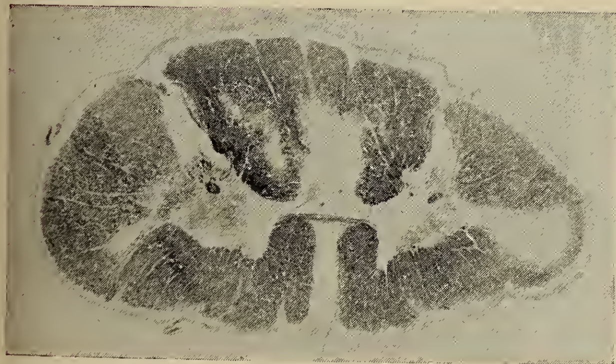
Fig. 7.—Small area of "insular sclerosis" in cortex of first frontal, prefrontal area, left, Case II. Mann's stain after Weigert's glia mordant fixation. Note preservation of ganglion cells within the degenerated area and the presence, particularly along the edges, of small round fairly clear spaces. These are shown in the following figure to be cells of the so-called Abraum type and most likely of glial origin. Bausch and Lomb 2-3 achromatic objective, no ocular, bellows extension 105 cm.

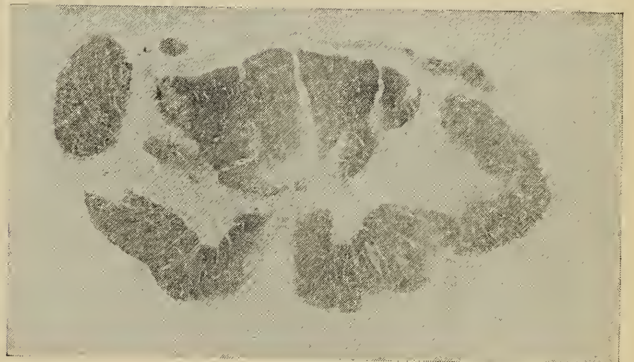
Fig. 8.—The edge of such an area as described in preceding legend, Case II, calcarine cortex, right. The patch, however, is older and considerable glia fibre proliferation has taken place. The large cells, however, are shown, and in the upper third of illustration, central portion, is seen a ganglion cell against which a cell of similar nature is shown. Zeiss 8 mm apochromat, projection ocular No. 4, bellows extension 122 cm.

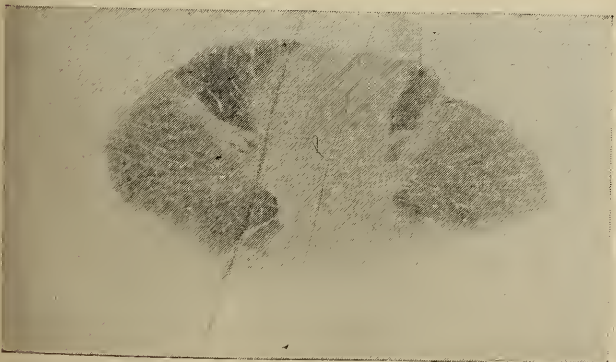
Fig. 9.—Edge of fairly old lesion in spinal cord, lumbar region, of Case I. Numerous large *Abraumzellen* between the glia fibres and within the perivascular spaces. A few axiscylinders persist. Acid fuchsin—light green stain after Alzheimer. Zeiss 2 mm. apochromat, comp. oc. No. 4, bellows extension 102.5 cm.

Fig. 10.—Perivascular spaces of a group of small vessels crowded with *Abraumzellen.* Zeiss 2 mm. apochromat obj., projection oc. No. 2, bellows extension 140 cm.

Fig. 11.—An *Abraum* cell inclosing an amyloid body, centre of figure, and beneath degenerating cells of the same character in which axiscylinders can be made out. The last two figures from spinal cord of Case I. Zeiss 2 mm. apochromat obj. projection oc. No. 2, bellows extension 80 cm.







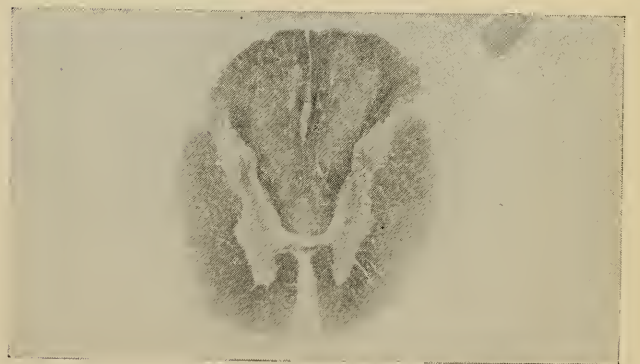
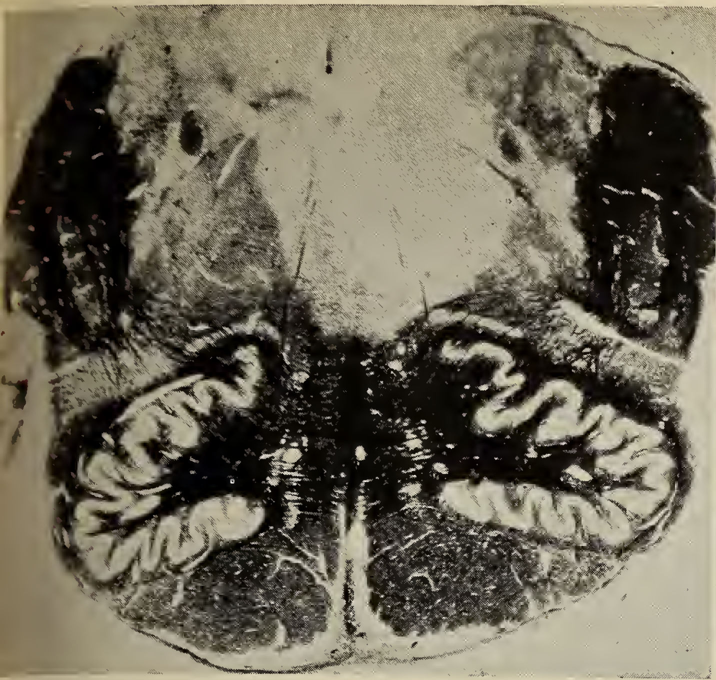
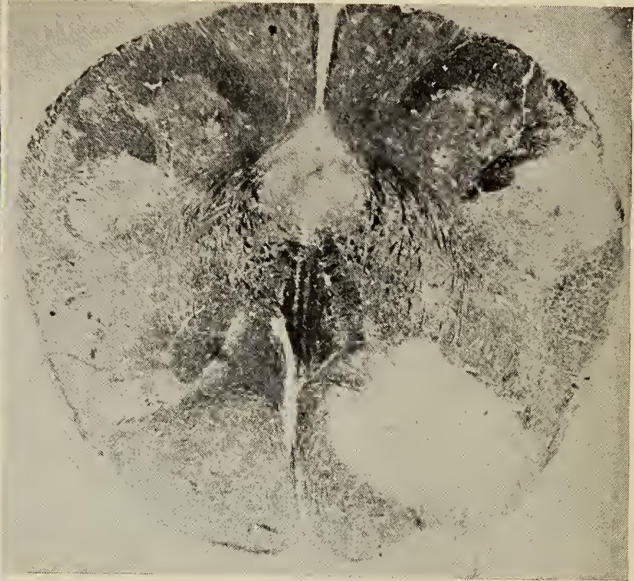


FIG. I

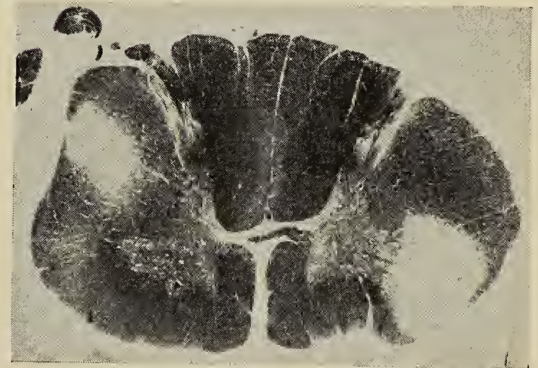
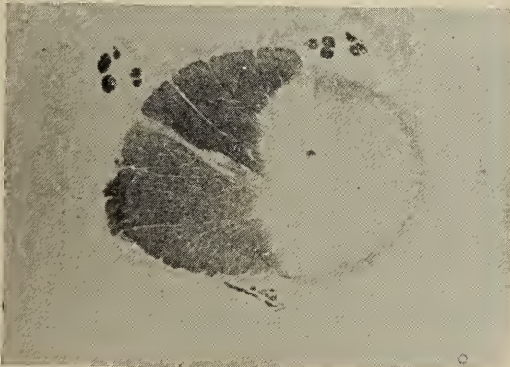
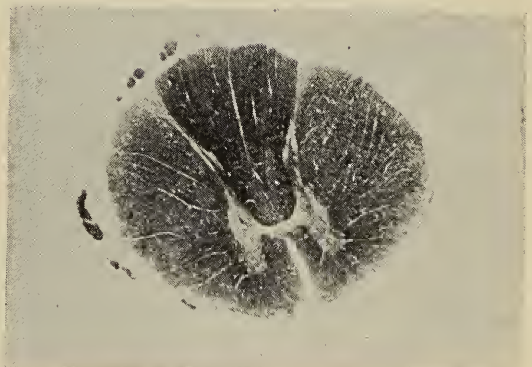
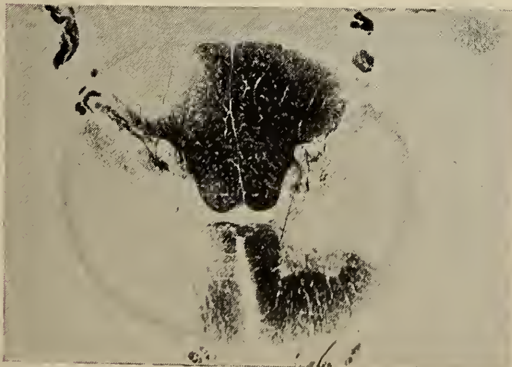
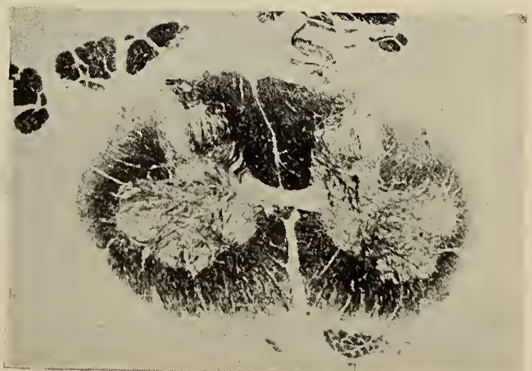






FIG. 2

FIG. 3

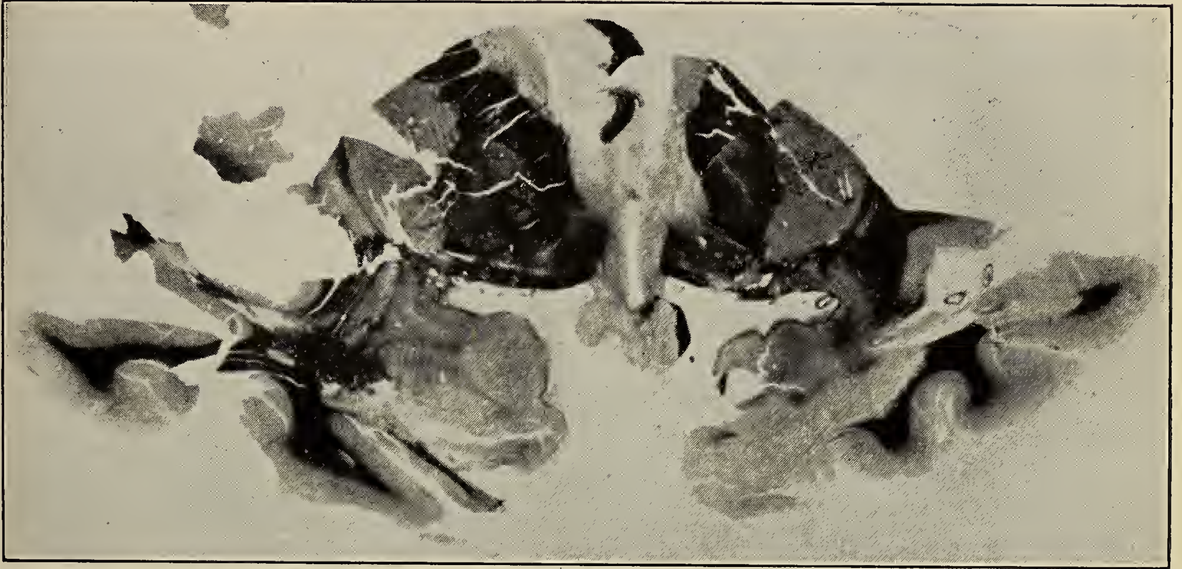


Fig. 4

Fig. 5

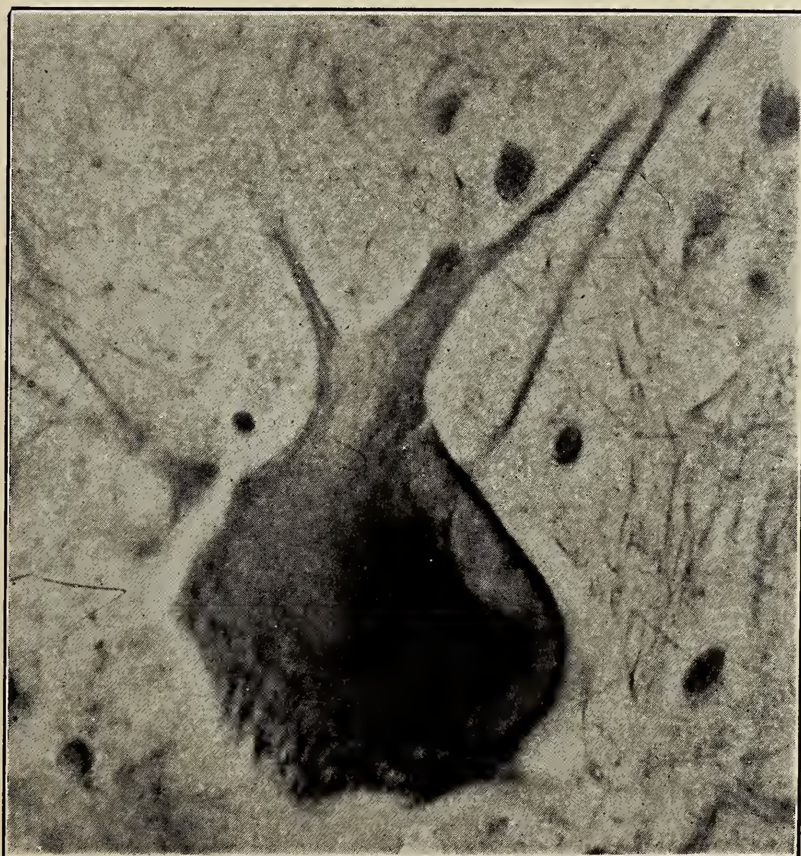


FIG. 6

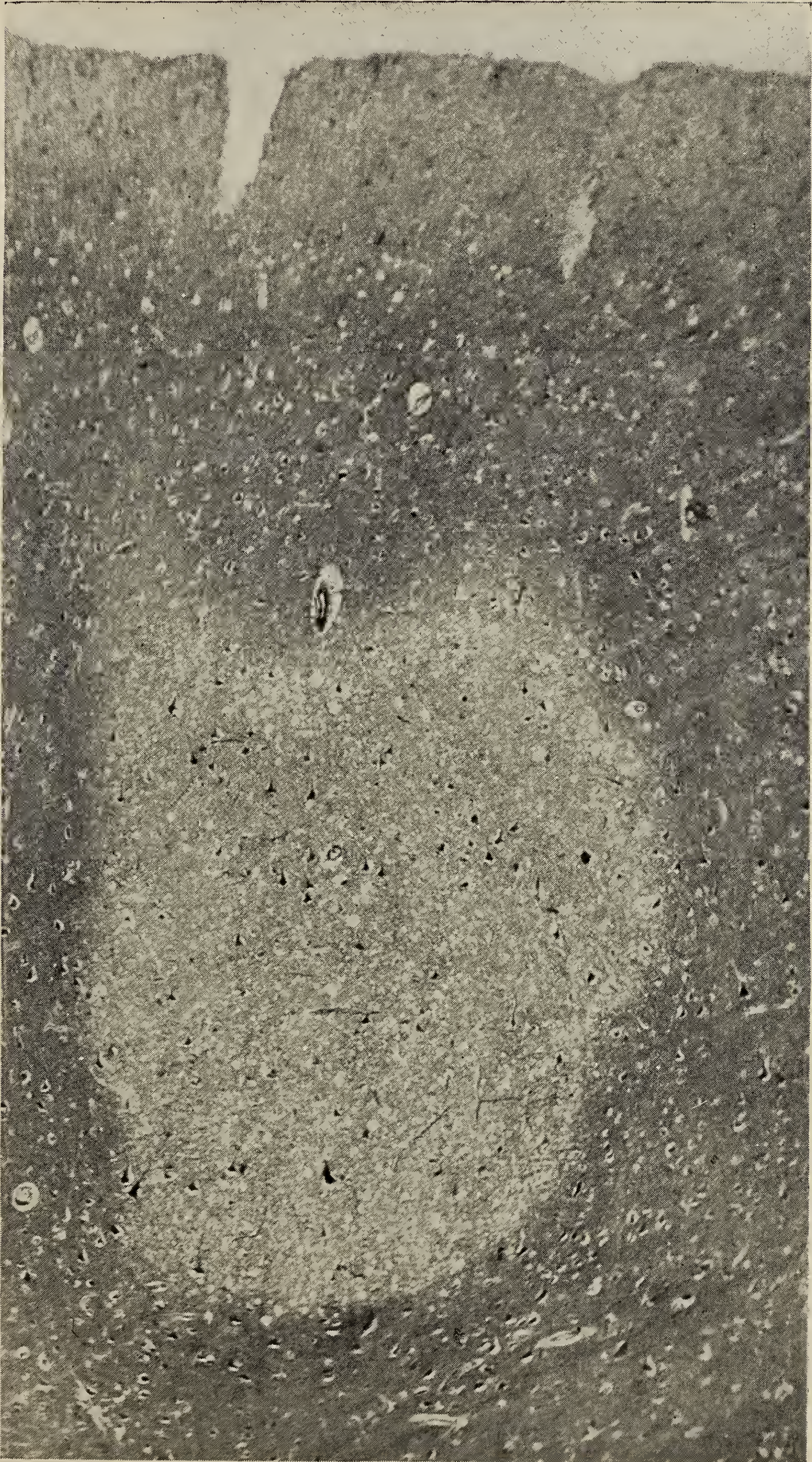


Fig. 7

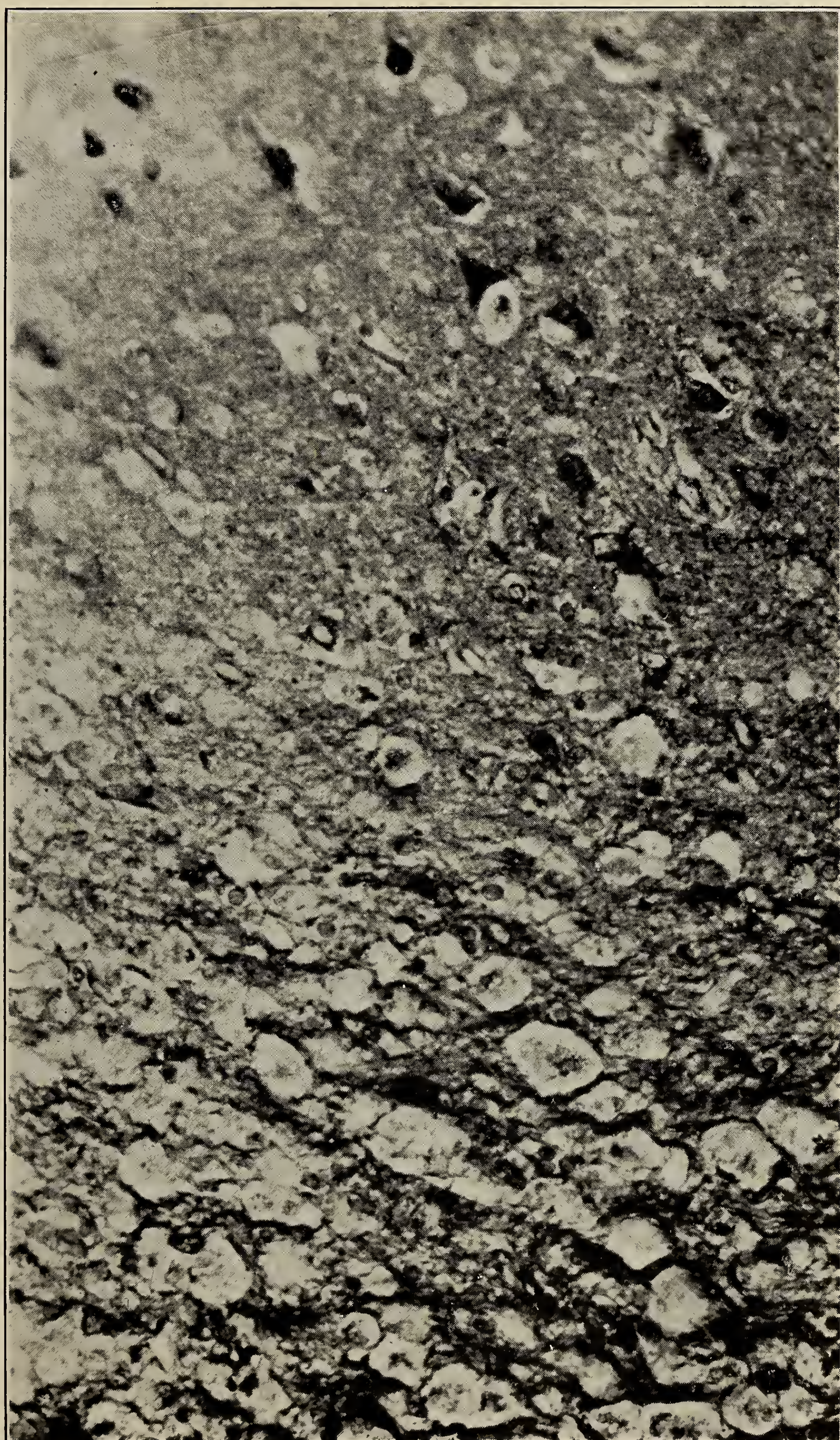


Fig. 8

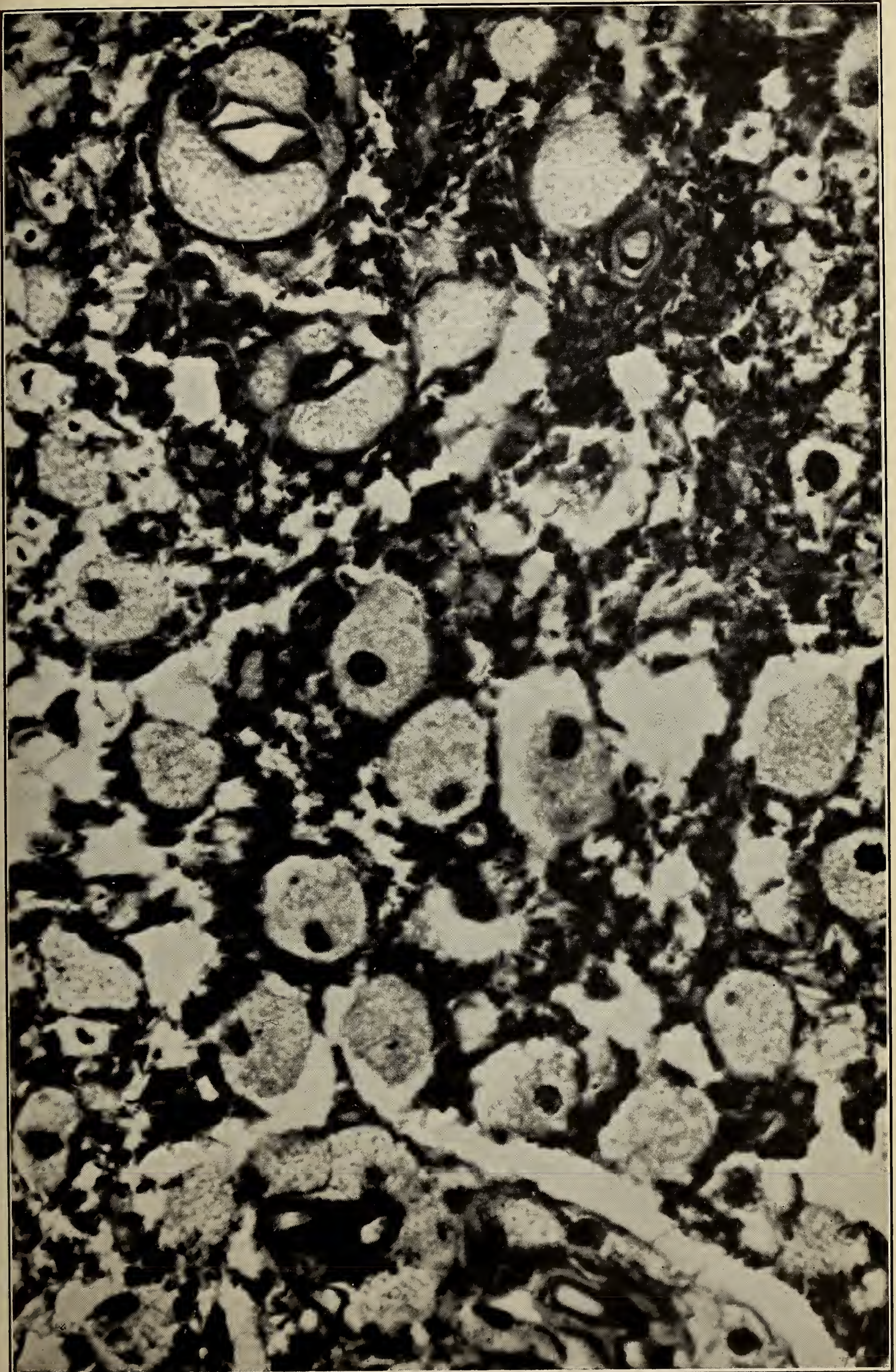


Fig. 9

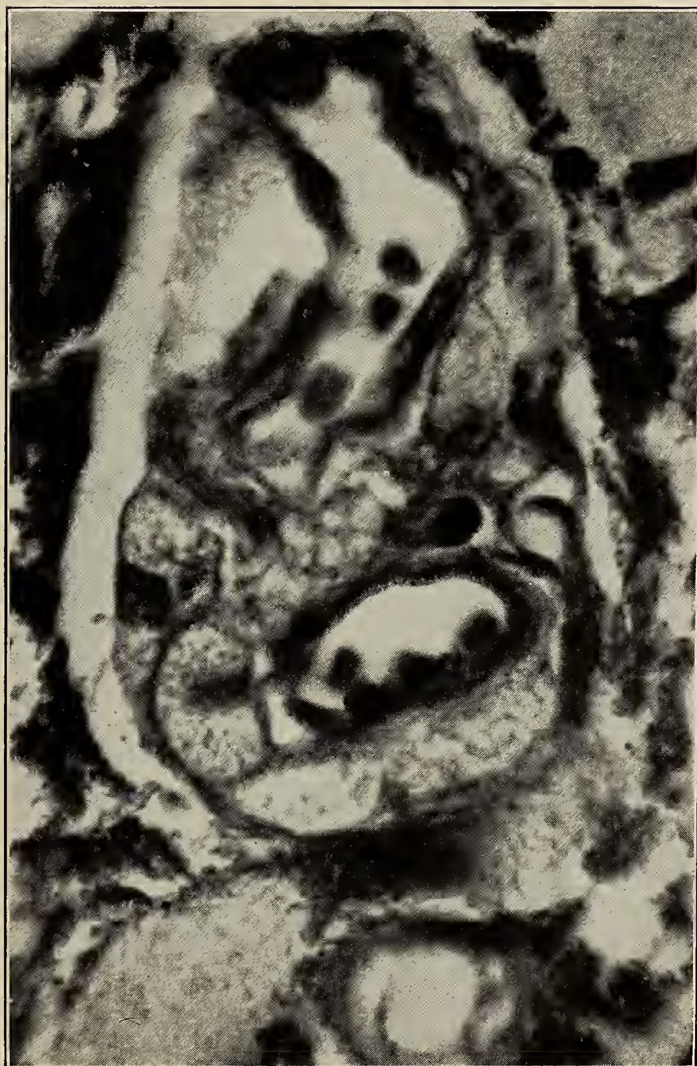


FIG. 10

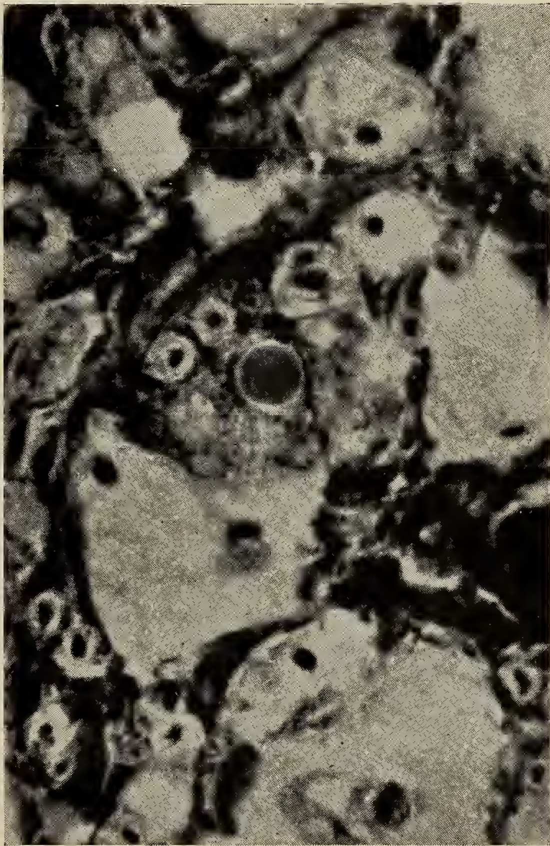


FIG. 11

VII

SLEEP AND SOMNAMBULISM.

Authorized Translation by William W. Coles, M.D.

FROM THE FRENCH OF PROF. H. BERNHEIM, NANCY, FRANCE.

To say that sleep is due to anæmia or hyperæmia of the brain, to auto intoxication or to a simple cerebral dynamism gives us but an incomplete explanation. All that we know clinically is that after a waking period of varying length a feeling of lassitude comes over us, a sensation of somnolence; we go away by ourselves, our eyelids become heavy; we remain quiet, relax; a pleasant torpor envelopes us and external impressions gradually become effaced. The voluntary intellectual activity is dormant while only the automatic life of the imagination as expressed in dreams is operative. After a varying length of time consciousness gradually returns; external impressions become vaguely evident; we feel again that agreeable torpor which formed the prelude to the sleeping state; a sensation of somnolence which gradually passes away ushers in the reawakening of the intellectual activity but leaves a complete amnesia for the period of sleep except for the recollection of certain dreams which may have passed along the horizon of our consciousness. Only these sensations of somnolence preceding and following the sleeping state and the memory of the dreams indicate to us that we have slept. The objective symptoms are the closed eyes, the relaxed limbs, the apparent unconsciousness of the subject and sometimes the deepened respiration.

Still, these subjective and objective symptoms are not sufficient to characterize physiological sleep. The intoxication due to opium, chloral, uremia and acteonæmia of typhoid infection can produce sleep; likewise hysterical or epileptic states. An apoplectic coma resembles a profound sleep but differs in that the individual cannot be awakened. Catatonic stupor often gives the impression of a prolonged sleep. However, anyone affected with the above conditions may have a natural sleep which must be differentiated from the pathological. The functional and organic conditions of the brain must be widely different in the two types, but the differences are unknown to us, for we know nothing of sleep beyond its characteristic unconsciousness with or without dreams. And these dreams, are they characteristic of sleep? They may occur in the somnolent period preceding it or even in the waking state as products of the imagination when the active

attention and reasoning power exercises no definite control over these chance impressions. The condition known as reverie differs little from the dream and our subsequent recollection of the content of the reverie may be vague or clear.

We speak of partial sleep, of which reveries, autosuggestions or suggestions due to hypnotic control in the waking subject are characteristic phenomena and evidences of a numbing of certain psychic functions with activity of others essentially the imaginative. When we dream, sleep is really partial though still more profound. But if the mere dulling of certain faculties is made a criterion, the definition of sleep would include all abstractions of the attention, whereas the word means for us a state of general unconsciousness affecting the entire being and not a single organ or psychic modality. Instead of referring to the reverie as a partial sleep, it were better to consider the reverie as a waking dream due to automatic cerebral activity uncontrolled by the voluntary attention. Either condition implies the persistence of the consciousness, hence the most profound sleep, complete unconsciousness as in coma, is dreamless. Some believe that there is no such thing as a dreamless sleep, the memory preserving only those dreams of a certain degree of intensity. But we know that vivid dreams, even accompanied by somnambulism whether in the natural or hypnotic sleep, may be entirely forgotten. Furthermore, we often awake from a few moments sleep recalling dreams which have seemed to cover a long period of time, while on the other hand we often wake after a night of profound sleep with the memory of a dream which seems to have occupied but a moment. Hence it seems as though the dream were merely an episode in the sleeping state which has long intervals of absolute unconsciousness.

Dreams may be either active or passive. In the latter the sleeper watches the progress of the various episodes of the dream as a mere spectator; in the former he lives out the life of the dream and wakes convinced of its reality. He may even during the dream be somnambulistic and walk about, talk or perform many acts just as he would in the waking state. Can we say that such a state of activity is really sleep? It is well-known that hallucinability and somnambulism can be produced in the waking subject.

This brings us to the study of the artificial or hypnotic sleep, and will it shed any light on the physiological mechanism and phenomena of natural sleep which are so difficult of explanation?

The rapidity with which the hypnotic sleep is induced immediately speaks against its being due either to circulatory disturbances or an intoxication, but rather to a simple cerebral dynamism.

without lesion which can be aroused by an idea alone. Circulatory or toxic disturbances do not cause sleep itself but merely cause a feeling of somnolence or torpor which suggest it.

While the hypnotic sleep and the natural are the same, we know nothing of the psychology of either. Certain subjects in whom an attempt is made to produce a hypnotic sleep have the illusion of sleeping without any of its objective signs; they follow any directions given them and yet believe that they are asleep if they have been told that they are, and they even have an amnesia for what has occurred in the period of sleep of this type. One can even suggest that they have been asleep for several hours before the commencement of the hypnosis and an amnesia for that period will be developed. Other suggestible subjects fall into a true sleep with all the objective symptoms. Commonly this type has not been considered a true hypnotic state but a natural state into which the subject permits himself to pass, since it is characterized by the absence of catalepsy, anæsthesia, suggestibility, etc., conditions which are commonly a *sine qua non* of the varying degrees of intensity of hypnosis. But we believe that these phenomena are neither functions of the induced sleep nor the hypnotic state because they can be induced on the same subjects in the waking state and are a function of their physiological suggestibility. Hence we would say that the sleep in which these hypnotic phenomena occur is the less profound because of the persistence of the suggestibility. When the subject is made really to sleep by suggestion, the brain is inert, but when catalepsy or anæsthesia can be provoked the brain is active.

The term catalepsy implies commonly either hysteria or hypnotism, but such a state may occur in many normal subjects with the absence of either, subjects who are simply suggestible and lacking to a certain degree in spontaneity. Persons who are not suggestible often become so during severe illness, and this suggestibility indicates that ideation persists, for in coma or a typhoid stupor catalepsy can no longer be induced and there is complete relaxation. The cataleptic state is a phenomenon of consciousness, so with suggested analgesia, hallucinosis and all the phenomena coming under the head of somnambulism, which imply an active consciousness under the influence of suggestion, and are not phenomena of sleep. To obtain them by suggestion in the sleeping subject he must be at least partially awakened.

Hence, somnambulism is not provoked by sleep but by an intensely active suggestibility; the brain must be awake. Certain somnambulists have the appearance of being awake and say that they are, others insist that they are asleep. Somnambulism can be suggested during sleep only to be realized a certain time after

waking, the so-called post-hypnotic suggestion. If this suggestion deals only with the usual incidents of the daily life, the subject would carry it out without realizing that his acts were under the control of another. Cannot what results experimentally by the suggestion of another come about through auto-suggestion of which the origin is unknown? Instead of suggesting acts, I could suggest post-hypnotic hallucinations, the hallucinatory form of somnambulism.

Somnambulism can be provoked by suggestion in the waking state and the suggestion thus created, with or without hallucinations, may last for a long time, constituting a true somnambulistic life. When the subject is no longer dominated by the suggestion he often has complete amnesia of what passed during the period. This is especially likely to occur if the state of consciousness has been profoundly modified, if the hallucinations or acts are not in accord with his normal psychology. But, by suggestion, the memories of this amnesic state can always be reawakened. Induced somnambulism, then, is only a state of consciousness in which the subject actively realizes received suggestions.

Spontaneous somnambulism occurs during sleep as an active dream, manifesting itself by ideas, sensations, emotions or hallucinations with active correlatives. A dream, reawakening impressions of which the brain has a latent memory, gives the suggestion. The student who during the night's sleep gets out of bed, goes to his desk and writes or studies, then returns to bed and in the morning believes that he has slept all night quietly, is a somnambulist who, possessed by the idea of a duty to be performed, is aroused from sleep to realize that idea in that special state of consciousness or auto-suggestion followed by amnesia which leaves his mind the illusion of unbroken sleep yet necessitates a psychic and intellectual activity incompatable with true sleep.

Sometimes these somnambulisms reproduce themselves night after night under the same form, and it is often easy to stop them by suggestion. A divorced woman as the result of threats made by her former husband suffered for months from nightly terrors which she could not overcome. I put her to sleep by suggestion and then by saying to her "There he is, who is there," reproduced the attack of somnambulism. Then by simply saying, "You will have nothing to fear from him, you will see him no more," I dissipated the phantom and prevented her imagination from bringing it up again. On awakening she had no memory of the experience. It is almost always possible to get a good result by persistent suggestive treatment, and this becomes especially important when the somnambulism takes the form of some act of violence.

Spontaneous somnambulism may occur without sleep in certain subjects as the result of a strong emotion which may cause a profound psychic disturbance lessening the activity of the attention and so modifying the consciousness as to induce the symptoms of somnambulism. Religious ecstacy at times is responsible for an hallucinatory somnambulism in which visual and auditory hallucinations play a part. Hysteria, especially, induces somnambulism either during the convulsive crises, subsequent to them or even in their absence, when the somnambulistic state seems to replace the crisis.

The cause of the somnambulism is often unknown. Out of the innumerable ideas passing through the mind one alone may in an impressionable individual be retained by the brain and be responsible for an active auto-suggestion. A dream, for example, forgotten in the waking state, may by some association of ideas give rise to a more or less lasting suggestion which will absorb and direct the physical and psychic activity of the subject.

Before leaving the subject which I have elaborated further elsewhere, I would add a word on the transformation of the personality manifested in that form of somnambulism in which the subject, controlled by a certain sequence of ideas, may lose the feeling of his own identity and believing himself another personality act in consequence. Other subjects without losing their identity, without active hallucinations change only as to their character or habits for a variable time and upon their return to the normal consciousness have forgotten that they have passed through an abnormal state. Such a state may be repeated periodically and constitute the so-called double personality or consciousness of which many examples have been cited in the literature. At first glance, cases of this type seem strange and mysterious, contrasting so strongly as they appear to with our physiological psychology, yet, reflection shows that they have their analogues in normal states so common that we pay no attention to them. Under the influence of certain emotions or impressions there may be an entire change in character; a person becomes angry, for example, and does things which are entirely at variance with his accustomed mental attitude. After a time his good nature returns and sometimes he has no clear recollection of what he did during the period of transformation. Certain women at the time of the menstruation pass through such experiences. These phenomena are not extraordinary and do not impress us nor appear pathological unless they are followed by amnesia when we believe that the subject has two lives, two personalities of which the one is ignorant that the other exists.

But however remarkable this amnesia may be it does not

imply any fundamental peculiarity of the period of modified consciousness; it is not constant, it is not always complete. We have seen that in the second state certain subjects preserve a memory of the first condition, retain their sense of identity. The experiences of experimental somnambulism are sometimes, as with dreams, more or less clearly realized on the resumption of the normal state and one can always, by suggestion, recall them.

Is it the same with the spontaneous double personality? The reawakening of the memory is more difficult in the natural than in the experimental somnambulism because in the latter we ourselves, by suggestion, have placed the mind in a state of concentration which has created the images and it is easy to reduplicate that state. But when the somnambulism is the result of special emotions provoked by hysteria, illness or certain physical or moral shocks it is not always easy, by suggestion, to reproduce an analogous state of consciousness which shall recall the same images, for the conditions responsible for the phenomena must be reproduced, and that mere verbal suggestion cannot always do. This same amnesia, more or less well marked, is common as the result of emotional shocks, accidental or pathological, which profoundly modify the consciousness. Following typhoid fever the patient has sometimes forgotten what happened in the early days of his illness or even before its onset, when the consciousness was active and the intelligence clear. Certain criminals who have perpetrated a crime, even with premeditation, but with a brain over excited by their horrible conception, preserve only a confused recollection of the drama in which they have played a part, or else appear to have forgotten it entirely.

Hence, amnesia must be considered as a phenomenon, sometimes but not always, added to all serious psychological disturbances. But whether amnesia is present or not, the modification of consciousness which we term somnambulism is the same, just as the dream is the same whether or not it be followed by amnesia. Between absolute amnesia and perfect recollection all stages may occur, and this fact does not change the psychic nature of the phenomenon. To show that the psychology of somnambulism and the double personality, however singular and abnormal it may appear, has its analogue in normal psychology, and to separate from these phenomena the taint of the mysterious and marvelous has been the constant aim of my studies.

CONCLUSIONS.

1. Profound sleep is characterized by complete suppression of the psychic function of the brain occurring spontaneously as a periodical, psychological process.

2. Dreams are the result of the automatic activity of the imagination uncontrolled by the faculty of judgment.

3. The dream presupposes that the brain is awake to some degree, greater in the case of the active dream than of the passive.

4. Profound sleep produced by suggestion is accompanied by unconsciousness with purely reflex reactions.

5. The so-called hypnotic phenomena, catalepsy, induced contractures, analgesia, hallucinability and suggestibility demand a reasoning activity implying the awakening of the mental faculties.

6. Active suggestion expressing itself by acts, thoughts or hallucinations constitutes somnambulism which may be induced in certain subjects either in the sleeping or waking states, and in both states it may occur spontaneously as the result of emotional shocks of hysterical or epileptic crises or of injuries.

7. The acts of somnambulism like all serious disturbances of consciousness may be followed by a total or partial amnesia. In the induced form of somnambulism the memory can always be reawakened.

8. Somnambulism lasting for a considerable period of time with or without hallucinosis constitutes a somnambulistic life which if repeated often in the same subject alternating with fair regularity with a period of normal life constitutes the so-called phenomenon of double consciousness or double personality. Such states without amnesia are natural to many individuals.

9. These different phenomena, dreams, somnambulism or the double personality are not due to unconscious cerebral activity but rather to a cerebral activity modified dynamically by suggestions or auto-suggestions which control the acts, thoughts and feelings, indeed all the active mental life of the subject.

VIII

PURULENT STREPTOCOCCIC CEREBRO-SPINAL MENINGITIS FROM MIDDLE EAR DISEASE:

(PLATES XXVII-XXIX)

By Ruth B. Coles, M.D., and Solomon C. Fuller, M.D.

The opportunity to follow clinically the development, course and termination of even an isolated case of purulent cerebro-spinal meningitis, of streptococcic origin, and to compare with these the autopsy findings, is not sufficiently common to detract from the interest of the following case:

W. S. H. (Dr. Coles) No. 9291, a woman thirty-six years of age, was admitted to Westborough State Hospital, Dec. 3, 1910.

Family History.—The family history reveals a neurotic taint, if not a direct heredity for mental disease. The mother of patient was of a nervous temperament and suffered from heart disease. Two near relatives (brother and paternal grandfather) died from tuberculosis, one distant relative (paternal) was insane following an accident when twenty. Otherwise the family history as elicited is unimportant.

Previous History.—The patient herself was never rugged as a child, although she had no serious illnesses. She showed a normal mental development, and was a graduate of Wellesley College. She was naturally a student and hard worker; normally social and of attractive personality. She was married at the age of twenty-six and had borne one child, now eight years old. There were no complications noted with the labor, but during the lying-in period the nurse reported that the patient appeared "queer" at times. To everyone else she had seemed normal until two years ago, when the mental trouble developed rapidly. She was, at first, excessively "nervous" and worried over unimportant things. She did not sleep or eat well, and complained of her head feeling badly. Hallucinations of hearing soon developed with ideas of suspicion against those about her; she was fretful and despondent, though this last was not profound. She was later untidy, even filthy, but not violent or especially resistive.

Here.—The patient was well nourished physically on admission to Westborough, but the following abnormal conditions were noted: heart's action arythmical and accompanied with mitral and aortic murmurs; tongue coated, bowels sluggish; the left pupil larger than right, both reacting sluggishly to accommodation but normally to light; hearing normal in right ear, markedly dull in left. No other physical disturbances were detected.

Mentally, she presented the following picture: clear consciousness, accurate orientation, good comprehension and attention, flow of thought coherent and relevant, slight depression which disappeared when talking of her early life, good memory for events previous to the development of her psychosis but some confusion as to more recent happenings, a tendency to evasiveness, some reticence and slight suspiciousness. There were also auditory hallucinations and mild persecutory delusions based on hallucinations which she termed "impressions". There was a degree of insight into her condition. She gave a satisfactory account of her life and was able to give a reasonable cause for her breakdown—excessive work, extra responsibility and secret worry the winter before.

Throughout her hospital residence, her mental condition showed little change up to Feb. 9th, 1911. She was always quiet and lady-like, but reticent, of abnormally sober mien and difficult to approach. She never made friends among the patients and was always reserved towards the physicians and nurses. At times she seemed puzzled, as though she did not understand what was expected of her, and that which at first had seemed an inertia was found later to be a slight negativism. She talked little about going home, but showed no indifference on this subject. She later adapted herself more to her surroundings and occupied her time with sewing for herself and in reading. She was always retarded in her movements and would frequently look the questioner in the face a full minute or two before replying. She occasionally showed an irritability, especially when the hallucinations which were always present, became particularly active. The delusions were of a mild persecutory type, based on her hallucinations.

Feb. 5, 1911. Her condition remained as stated above until this date when she complained of earache, left ear. No other symptom presented, and within 24 hours the trouble apparently subsided.

Feb. 7, 1911. The left ear was found to be discharging a thick, bloody serum. Some tenderness was noted over the mastoid, but she no longer complained of pain and the next day the discharge ceased. The tenderness was still present, though lessened. The mental condition seemed as usual.

Feb. 9, 1911. During the night of the 8th she became much worse. This morning she was dull, stuporous, not responding readily to stimuli, extremely restless, rolling the head from side to side and moaning as though in pain. At times she seemed to comprehend what was said, but would only reply "I don't know," to all questions. She did not obey directions readily. Temperature 105 F.; pulse 112. She lay with knees drawn up, but with-

out rigidity of the muscles, distension or tenderness of the abdomen; urination frequent and involuntary. A well marked dermographia was present. Koenig's sign was absent. The pupils were equal and reacted to light, accommodation test impossible. The patient seemed drowsy and frequently dropped into an uneasy sleep from which it was difficult to arouse her. She seemed to recognize her husband who came to visit her but made no effort to speak to him, barely looking at him. Temperature varied between 103 and 104 F.; pulse between 94 and 120.

Feb. 10, 1911. Paracentesis.

Feb. 12, 1911. Lumbar puncture, but no fluid obtained. There was a well marked tendency to turn the head to the right and backward but without rigidity of the neck muscles. Consciousness was still more clouded. The patient moaned constantly. The bowels were constipated.

Feb. 13, 1911. Rectal incontinence; abdomen distended but not tense; difficulty in swallowing. The patient has ceased to moan, but moves her left hand continually, picking at the bed clothing. The right arm is flaccid and occasionally twitching of the right half of the upper lip is noted. Arm reflexes elicited, equal; no abdominal reflex; knee jerks absent on both sides; plantar reflex normal on both sides; no ankle clonus; calcarea reflex absent; little if any response to pain stimuli on legs. Attempts to flex legs on thighs were difficult and caused evident discomfort to patient. Congestion and edema of conjunctivæ; left eye turned downward and outward; pupils react normally to light; examination of discs impossible because of position of eyes. There was a marked pulsation of the right carotid. Blood pressure 130; marked leucocytosis; temperature 106 F.

Feb. 14, 1911. Death.

Autopsy 17 hours post mortem. (Dr. Fuller.)

Anatomical Diagnosis.—Purulent cerebro-spinal meningitis, cerebral congestion and edema, purulent otitis media, purulent mastoiditis, septic endocarditis, acute myocarditis; pulmonary hypostasis; hepatic congestion and fatty degeneration; acute parenchymatous degeneration of spleen; congestion of pancreas; acute parenchymatous nephritis; congestion of internal reproductive organs, cystic ovaries.

Abstract of Autopsy Protocol.—The calvarium is of normal thickness but diploë are scant. The dura is normally adherent, congested, tense and bulges laterally. On the left side, the visceral surface of the dura is smooth, but on the right side, a thin, yellowish, fibrinous exudate is found beneath that part of the membrane which covers the convexity of the right hemisphere,

and in the middle fossa of the base. This pseudo-membrane is easily stripped. The pia is intensely congested and everywhere the membrane exhibits a purulent, semi-gelatinous exudate, most marked over the inferior two thirds of the mesial surfaces of the frontal lobes—welding them together—the basal surface of the frontal lobes, anterior and posterior perforated spaces, Sylvian valeculæ and ventral surface of pons. The exudate is also found on the ventral surface of medulla, basal portion of cerebellum and in the sella turcica, but here it is far less pronounced. In the exudate are embedded the first, second, third, fourth, fifth, seventh and eighth pairs of cranial nerves. The cerebral gyri are flattened and edematous, the sulci shallow. The consistence of the whole brain is diminished, the left tempero-sphenoidal lobe softer than the remaining portions. Scattered here and there over the convex, mesial and basal surfaces of the cerebrum are numerous small hæmorrhagic areas on the surface of the cortex. Section of the left tempero-sphenoidal lobe reveals on macroscopic evidence of abscess ot the cortex or white substance, nor are such found in the cortex beneath the most purulent areas of the pia. The cerebral arteries are not sclerotic. The ependyma of the fourth ventricle is smooth. . . . . . The hypophysis is dark red in color and mushy in consistence. . . . . . The brain with pia attached and before sectioning weighs 1507.5 grams.

Section of middle and internal ears, and of the mastoids reveals in the left middle ear and in the cells of the mastoid of the same side a purulent exudate, while the corresponding structures on the right side are negative for such findings.

Cord.—The cord is intensely congested, most marked in the sacral region. Everywhere within the pia is a purulent exudate such as described for the cerebrum, but less marked. Numerous small osteomata, distributed chiefly over the ventral portions of the thoracic and lumbar areas are also found in the pia. The general consistence of the cord is diminished. No gross focal areas of myelitis were encountered, though not every segment of the cord was cut at autopsy. . . . .

Heart.—The pericardium is smooth and contains approximately 25 cc. of clear, straw colored fluid. The heart, though within the normal range of size, is pale and flabby. . . On section, one of the mitral leaflets and the corpus albicans of an aortic semilunar cusp (aortic surface) present each a soft, rough, grayish white vegetation elevated about 2 mm. above the surrounding surface and approx 3 mm. through the base. The remaining valves appear normal. The heart muscle on section is pinkish yellow, streaked with lighter areas and considerably diminished in consistence. . . . Weight of heart, 40.5 grams.

For condition of remaining organs see anatomical diagnosis.

Bacteriological Examination.—Smears from the pial exudate and the pus content of mastoid cells, cultures from pial exudate on glucose bouillon, agar and glycerine agar (8 tubes), pus from mastoid (4 tubes), vegetation from mitral cusps (4). . . .All give pure cultures of streptococcus.

Microscopical Examination.—In section stained with toluidin blue, (F1 and F2, prefrontal area, anterior central, superior parietal, hippocampal gyri, cortex of calcarine area, base of cerebellum, optic commissure, frontal gyri of base), the most striking feature is the enormous infiltration of the pia, over the summit as well as in the sulci between gyri. (See Fig. 1). The funnel shaped markings in the external periphery of the cortex (*Pialtrichter* Keys and Retzius) are also infiltrated, but to a much less degree. With higher magnifications the chief infiltrating cell is the polymorpho-nuclear leucocyte. Still many lymphocytes are present and certain large cells—Macrophages—though fewer in number, are present in all areas studied. The nuclei of these large cells are vesicular, and are eccentrically disposed, though in younger forms centrally located, their protoplasm stained a faint pink, coarsely reticulated and frequently exhibiting inclusions of lymphocytes and polymorpho-nuclear leucocytes, as many as five cell inclusions in a single cell have been counted. (Fig. 2.) These cells, though frequently found in the neighborhood of pial vessels and sometimes in the vessel wall, are also seen in colonies some distance from vessels and occasionally beneath the pia in the outer edge of the molecular layer. Other large cells, more or less spindle shaped with a centrally disposed darkly staining nucleus and deeper pink but more homogeneous protoplasm, are also seen. Plasma and mast cells fail in all the areas studied. Colonies of streptococci, in great masses, are frequently seen. (Fig.3).

Lipoid substances as cellular content or free in pial mesh are not seen in toluidin sections, but sections stained after Mooers-Minkowski method exhibit certain products of decomposition, rather fine light red granules, in the protoplasm of the large spindle shaped cells, in some endothelial and adventitial cells and also occasionally free. These deposits, however, are not often encountered.

In the cortex, the vascular apparatus extending downward as far as the outer layer of pyramidals, shows a very moderate infiltration, almost exclusively lymphocytic, but all of such vessels are not infiltrated. There are also moderative progressive changes in vessel walls, but no especially noticeable regressive alterations shown. There is some cellular gliosis, particularly in the outer laminæ of the cortex, most marked in the molecular layer. An increase of glia cells about small cortical vessels is also seen. The

ganglion cells, rather generally present a shrunken, diffuse, dark staining appearance, many showing rather tortuous apical dendrites. Fuscous degeneration of ganglion cells in toluidin stained sections is not more excessive than is usually met with in the brains of subjects of like age, nor is such noticeable in satellite glia cells or other glia cells, but in the sections treated with Mooers-Minkowski stain, fine red granules similar to those described in the pia are found in practically every ganglion cell, in many of the satellites, in endothelial and adventitial cells. In the ganglion cells these granules are deposited not only in the area where one usually finds the well-known yellow pigment but in other portions of the cell as well, frequently in all visible dendrites. Moreover, even when found in the area of usual pigmentation, in glia as well as in ganglion cells, these granules do not occupy all of the usual lipoid area. They probably are not the same granules shown in Scharlach stained sections, for they are not as large or as numerous.

In sections previously fixed in Weigert's glia mordant and subsequently stained with Mann's eosin-methylene blue mixture or Mallory's phosphomolybdic-hæmatoxylin, the proliferation of connective tissue fibers in the pia is better displayed, but the other details of the pial exudate are not as well shown as by the other methods described above. With regard to the deposits in ganglion cells shown by Mooers-Minkowski sections, there is no equivalent of these granules in the Mann stained sections. Occasionally, in the neighborhood of blood vessels and apparently free in the diffuse glia mesh, a few dark-blue granules are encountered which are not unlike the granules described by Alzheimer as *Fullkorperchen*. A few small glia cells, with rather jagged protoplasmic bodies containing similar though smaller granules, are also seen in the molecular layer close to the pia, but these were not encountered in all the sections. The hæmorrhagic areas described on surface of cerebrum in the protocol, appear to be the result of small hæmorrhages within and beneath the pia.

The chief histopathological findings, then, with exception of chronic nerve cell alterations, are confined to the pia. The very moderate infiltration of vessels in the outer areas of the cortex and—even there not universal—it seems to us may be discounted as any very weighty evidence for an encephalitis. Infiltrative phenomena are common enough in the brains of persons dying of various psychoses and are not generally considered as evidence of acute inflammatory reaction. The pial infiltration, on the other hand, is replete with evidence as to explosiveness rather than chronicity. The small hæmorrhagic areas seen on the outer surface of cerebral gyri, described in protocol, can likewise

be ruled out as evidence of an hæmorrhagic encephalitis; it seems better to interpret them as extravasations from vessels in the pia, for in the sections a thin layer of blood cells with a few macrophages was the only thing encountered microscopically at such places. And yet from the intensity of the clinical symptoms and their rapid onset, more definite and acute changes in the brain itself had been anticipated. It is possible that the extremely purulent and turgid condition of the pia exerting pressure on the brain may have been responsible in part for the clinical symptoms after development of the meningitis, the streptococcic toxæmia serving as the remaining factor. Be that as it may, the chief anatomical interest, it seems to us, lies in the fact that we have a severe purulent meningitis without cerebral histopathological alterations of sufficient intensity to be dignified by the designation encephalitis.

EXPLANATION OF PLATES.

Fig. 1.—Pia dipping down between two convolutions. The enormous purulent infiltration is at once apparent and while there is some reaction in the molecular layer, it is by no means commensurate. From the prefrontal convexity, toluidin blue staining after Nissl, Bausch and Lomb 2-3 achromatic obj., no ocular, bellows extension 192 cm.

Fig. 2.—Macrophages in the neighborhood of a small pial vessel, some showing cell inclusions, others a coarse-meshed net structure of their protoplasm. Some young forms are shown. Alcohol fixation, toluidin blue staining. Zeiss 8 mm apochromat, projection oc. No. 4, bellows extension 125 cm.

Fig. 3.—Colonies of streptococci in the pial exudate. Alcohol fixation, toluidin blue staining. Zeiss 2 mm apochromat, no ocular, bellows extension 187 cm.

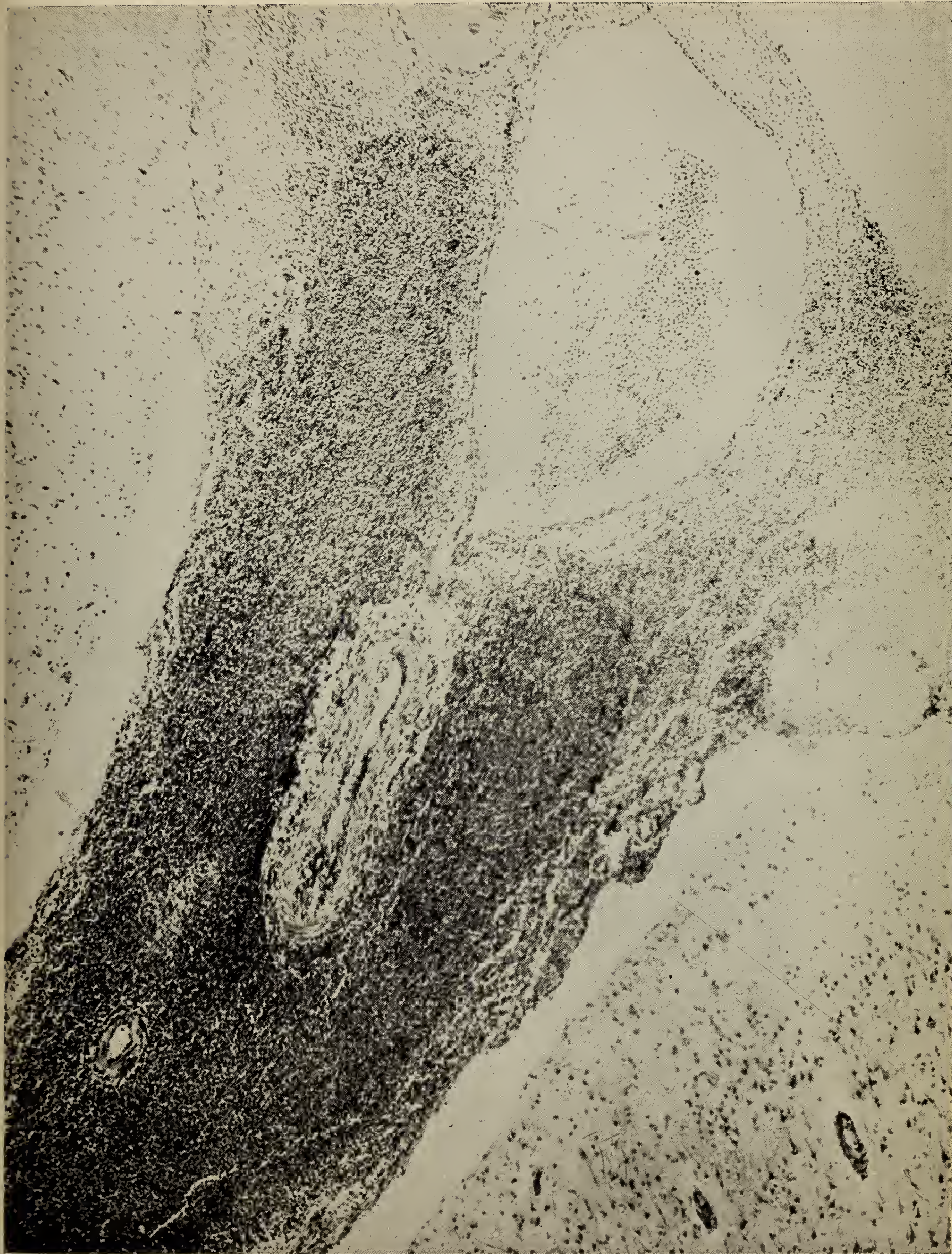


Fig. 1

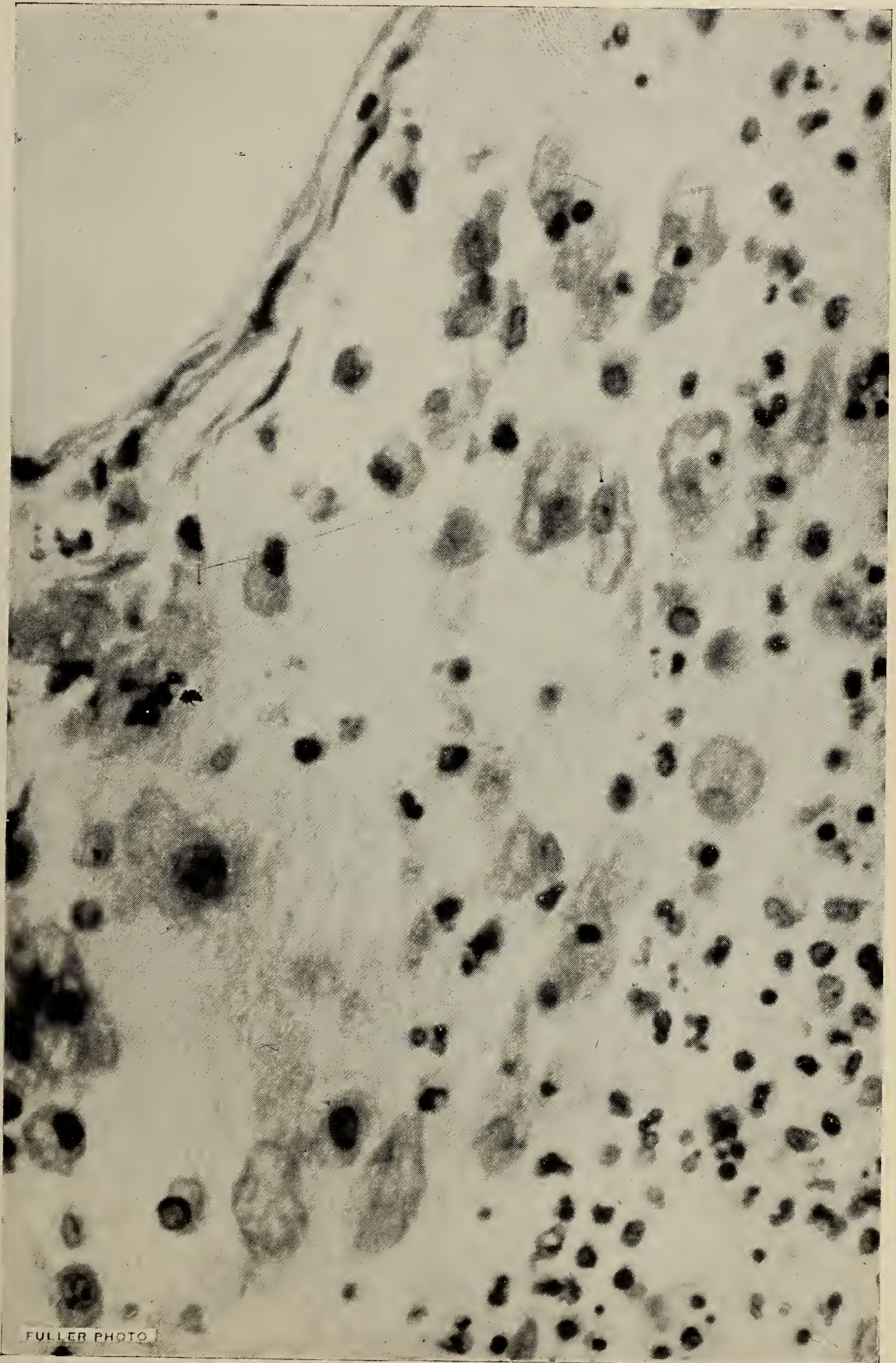


Fig. 2

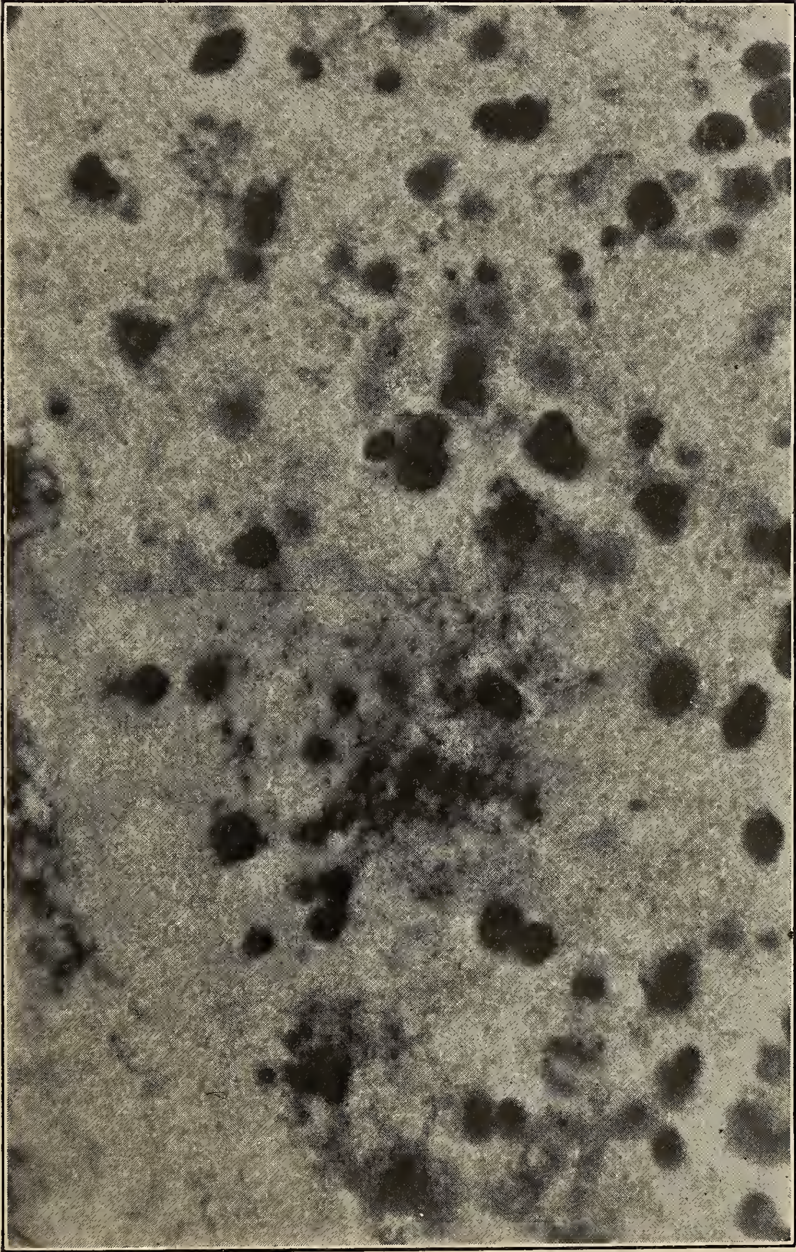


Fig. 3

IX

BRAIN WEIGHTS AND PSYCHOSES

By Stella B. Shute, A.B.

Since there seems to be some general relation between psychoses and brain weights, 300 brains of persons dying insane, which came to autopsy at the Westborough State Hospital have been examined and the cases grouped according to the various clinical diagnoses in order to determine to what extent the present material corroborates statistics thus far accumulated.

To decide the question whether a conclusion with regard to the mental health of a person can be drawn *á priori* from the brain at autopsy, it would be necessary to compare a table of pathological brain weights with the corresponding normal weights and thus strike an average in each group of psychoses.

The most complete investigation concerning normal average brain weights which was worked out by Marchand, shows that 1400 grams is the average normal brain weight for men between the ages of 15 and 60, and 1275 grams for women. According to the statistics of Marchand a brain weighing less than 1250 grams is to be considered abnormally small and one weighing over 1550 grams abnormally large. The lowest weight of a female brain which was not pathological was that of a woman over 60 years of age, the weight being 950 grams. With the exception of this case, Marchand's lowest boundary among female brains was 1000 grams.

Handmann, of the Pathological Institute at Leipzig, examined 1414 brains and obtained results similar to those of Marchand, namely, 1370 grams the average for men, 1250 grams for women.

The researches of Tigges and others show that with psychoses in general, and dementia paralytica in particular, the brain weight diminishes in proportion to the duration of the disease, while in acute progressive psychoses frequently a high brain weight is found.

Mittenzweig compared the brains of 1132 patients dying in the Herzberg Institution with Marchand's normal weight paralytica, and separated them according to four groups: dementia paralytica, senile dementia, organic and functional psychoses. He found that the average brain weights in dementia paralytica and senile dementia cases were considerably lower than the corresponding normal weights,—with women even as low as the normal minimal

weight. With the other organic and functional psychoses there was no appreciable difference from the normal. A number of paralytic and senile brains had a weight which was below the lowest normal boundary (1000 grams for men, 950 grams for women over 60 years). With such brains as showed "absolutely low" weights, a mental illness, according to Mittenzweig, was very apparent. The conclusions from the painstaking work of Mittenzweig are, that in general the brain weights with psychoses are lower than the normal weights and that brains with organic diseases may be considerably lighter than the lowest normal brain weight.

Bolton in his extensive treatise on "Amentia and Dementia," found that in all of his various groups of psychoses the average brain weights were below the normal averages of Marchand.

In 1907 Entres pointed out that in many cases with short duration of hemiplegia a high brain weight is determined, especially in cases where the shock is followed by death, while in cases of long duration of illness, Ilberg and Babcock have both shown that with long-standing paralysis a loss of weight proportional to the length of the supervening psychosis is the rule.

The recent study of Scharpff includes the four groups of psychoses into which Mittenzweig classified his material, although his tables, patterned after the Ziehen method, are based only on dementia paralytica and senile dementia cases. As a whole, his averages agree with those of Mittenzweig. Of his dementia paralytica group, however, the average weight was higher than the corresponding weight of Mittenzweig's group, but he explained that difference by the fact that in an asylum where there has been time for atrophy, more long-standing cases come to autopsy than in a clinic where relatively more acute progressive cases are observed.

The present material includes the following psychoses: dementia paralytica, senile dementia, organic dementia (including arteriosclerosis and tumors), paranoia, epilepsy, dementia præcox, involution melancholia, manic depressive insanity, alcoholism, imbecility, exhaustion-infection psychosis and syphilis.

DEMENTIA PARALYTICA.

The 60 cases of dementia paralytica are grouped according to the duration of the psychoses*, into three sub-classes: those less than one year, including 13 male brains with an average age of 43 years, and average brain weight of 1381.9 grams; those from

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*For the duration of the psychoses the time in hospital is given plus the assigned duration before commitment. The latter, in many cases, is only approximate, since the histories given by relatives of patients are not always dependable.

one to three years, including twenty-five male brains with an average age of 49 years and an average brain weight of 1242.2 grams, and three female brains with an average age of 41 years and an average brain weight of 1200.1 grams; and those with a psychosis for more than three years, including fifteen male brains with an average age of 45 years and an average brain weight of 1230.3 grams, and four females, with an average age of 45 years and an average brain weight of 1103.6 grams.

The lowest brain weight was 963.9 grams, with a psychosis of more than three years, lower than the minimum weight for normal brains but 53.9 grams more than Scharpff's lowest male general paretic brain. Ten of the sixty brains, six males in the first group, two in the second, one in the third, and one female in the second, were above the normal average weight (1400g.).

SENILE DEMENTIA.

Of the male senile dementia brains with a psychosis for less than a year there are seventeen cases with an average age of 73 years and an average weight of 1263.6 grams; seventeen cases with a psychosis from one to three years, with an average age of 73 years and average brain weight of 1258.9 grams, and sixteen cases of more than three years with an average age of 74 years and an average brain weight of 1225.6 grams.

Of the female senile dementia brains there are six in the first period with an average age of 71 years and an average brain weight of 1179.3 grams; and thirteen in the third period with an average age of 77 years and an average brain weight of 1111.2 grams.

The lowest senile dementia brain weight was 882.1 grams, a female 85 years of age, which is lower than the lowest normal weight reported by Marchand as 950 grams, but higher than Scharpff's lowest female senile brain (776 grams). Scharpff pointed out that the average senile dementia brain weights for both sexes are relatively lower than the average dementia paralytica brain weights. Taken as a whole, this series of fifty senile dementia brains weighs only 38.8 grams less than 53 general paretic brains.

McGaffin, in his "Analysis of Seventy Cases of Senile Dementia", states, "it would seem that the female brain tends to lose in weight under the action of senile changes more commonly than the male and that the loss is greater." Southard also, in his "Senile Dementia" paper, has more female brains under weight than male. Both McGaffin and Southard, however, considered 1358 g. the normal average brain weight for men and 1235 g. for women. Even with these figures instead of Marchand's, the male weights are relatively less in these fifty cases than the female.

ORGANIC DEMENTIA.

In the first period there are seventeen male brains with an average age of 61 years and an average weight of 1314.8 grams; thirteen male brains in the second, with an average age of 66 years and an average weight of 1202.7 grams, and in the third period, eleven with an average age of 64 years and an average weight of 1235.2 grams. The female brains with organic dementia include three in the first period with an average age of 70 years and an average weight of 1067.8 grams; six in the second period with an average age of 53 years and an average weight of 1230.8 grams, and two with a psychosis for more than three years with an average age of 66 years and an average weight of 1094.9 grams. The fifty-two organic dementia cases include seventeen brains with arteriosclerotic focal lesions, and six brains with tumors. Fourteen male arteriosclerotic brains had an average weight of 1282.2 grams. Five of the brains with tumors, three females, two males, were below the normal average weight, the other, a female, weighed 1275.7 grams. In this group it is evident from the figures that the weights of the organic dementia brains, particularly the arteriosclerotic, are in inverse ratio to the age and length of psychoses.

PARANOIA AND CONDITIONS AKIN TO PARANOIA.

Ten female brains with a psychosis for a period of more than three years with an average age of 44 years, have an average weight of 1206 grams. Two male brains with a psychosis for two years and four years respectively, and 64 and 66 years of age, have an average weight of 1396.2 grams.

EPILEPSY.

Seven female epileptics with a psychosis for less than three years, with an average age of 43 years, have an average brain weight of 1211.9 grams. Six male epileptics with a psychosis for less than three years with an average age of 44 years have an average brain weight of 1335.9 grams.

DEMENTIA PRAECOX.

Six female dementia præcox brains with a psychosis for less than three years with an average age of 34 years have an average weight of 1308.6 grams, which is above the normal average female weight (1275g.). Two female brains with a psychosis for five years and seven years respectively and 34 and 44 years of age, have an average weight of 1332.4 grams. Five male dementia præcox brains with a psychosis for more than three years and an average age of 48 years have an average weight of 1461.4 grams, which is

61.4 grams above Marchand's normal average. Three brains with a psychosis for less than three years and an average age of 37 years have an average weight of 1481.2 grams.

IMBECILITY.

Of eight male brains five were below the average normal weight, while one weighed 1729 grams and another 878.8 grams. Of five female brains the average weight was 1211.9 grams.

INVOLUTION MELANCHOLIA.

Eight male brains with a psychosis for less than three years and an average age of 51 years have an average weight of 1374 grams. One brain with a psychosis for four years and 60 years of age, weighed 1424.5 grams.

MANIC DEPRESSIVE INSANITY.

Three male brains with a psychosis of less than three years' duration, with an average age of 44 years, have an average weight of 1360.7 grams. Three female brains with a psychosis for less than three years, with an average age of 48 years, have an average weight of 1332.3 grams. One male brain with a psychosis for four years and aged 55 years, weighed 1282.8 grams.

ALCOHOLISM.

Five male brains with psychoses for less than three years, and an average age of 52 years have an average brain weight of 1376.3 grams. Two male brains with more than three years' psychoses, with an average age of 58 years, have an average weight of 1211.9 grams. Three female brains with psychoses of less than three years' duration have an average age of 50 years, and an average weight of 1254.4 grams. Two female brains of more than three years' psychoses, with an average age of 45 years, have an average weight of 1247.3 grams.

EXHAUSTION-INFECTION PSYCHOSIS.

Seven female brains with psychoses for less than three years, and an average age of 44 years, weigh on an average of 1234.8 grams. Seven male brains of less than three years' psychoses, with an average age of 48 years, have an average weight of 1297.9 grams.

SYPHILIS.

Three female brains with psychoses for less than three years, with an average age of 49 years, have an average brain weight of 1176.5 grams. One male brain, with a psychosis of short duration, aged 35 years, weighed 1396.2 grams.

Of the last seven groups of cases, with the exception of the dementia præcox brains, the general conclusions of Mittenzweig

are borne out, viz., brain weights with psychoses are lower than normal weights and brains with organic focal lesions may be considerably lighter than the lowest normal brain weight. But in all estimations and comparisons of brain weights a very important factor must be taken into consideration, namely, the ratio of brain weight to skull capacity. A brain might be quite small for one subject, and yet a similar weight would be large enough for another. At Westborough, skull capacity is now also estimated, but the cases are as yet too few from which to draw definite conclusions as to the diminution of brain weights in persons dying insane. In most of the cases, especially senile atrophic brains, where the brain did not fall far below the average normal weight, there is sufficient disparity between the skull capacity and brain weight to suggest the importance of the relation of skull capacity to brain weights.

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X

A REPORT ON THE THERAPEUTIC USE OF BACTERIAL VACCINES AND ON ANTI-TYPHOID VACCINATION AT WESTBOROUGH STATE HOSPITAL.

By Clarence C. Burlingame, M.D.

For a short time, and that not a long while ago, bacterial vaccines held first place in the medical journals, but they have been already forgotten or abandoned by many. There are those, however, who still believe that bacterial vaccinations deserve a place among the established practices of medicine, even though they have failed as a panacea for all of the bacterial diseases. Those who have employed the vaccines most extensively have come to believe that they are reliable agents in combating certain infections, and that in them is found a valuable adjuvant in the handling of many surgical conditions. To one working among the insane, the vaccines come as a great boon, for it is not only difficult, but at times impossible to carry out usual surgical treatments successfully. A simple method of raising the body resistance against bacterial invasions and thus materially shortening the course of the infection or preventing its recurrence—such as has been demonstrated in many of the cases on which this report is based—should, therefore, be welcomed, and more extended study given the subject to determine the conditions under which vaccine therapy may be employed to the best advantage.

The period covered by this report extends from May, 1909, to April, 1912. During this time vaccine therapy has become more and more a part of the routine practice of the hospital in dealing with bacterial infections. The cases treated with vaccines include not only patients of this hospital, but also employees and a group of cases from the Lyman School for Boys, a State reform school in the town of Westborough.

Most of the vaccines used were prepared at the hospital laboratory. In the beginning of the work stock vaccines were secured elsewhere. In many instances autogenous preparations were used exclusively, but more frequently Westborough Hospital stock vaccines preserved from preceding cases were employed. The results of our stock vaccines were usually good, particularly where a stapylococcus was the offending organism. While in most instances with infections of this character the stock vaccines were entirely satisfactory, cases did occur which, though responding to the stock, showed a tendency to relapse, remaining well only after administration of an autogenous vaccine.

Method of Preparation.—Cultures were taken in the usual manner and the vaccine prepared from the growth resulting from the second implantation when the delay in treatment warranted, otherwise the vaccine was prepared from the first culture. The cultures were made on plain agar slants, except as stated otherwise later on in this paper. After 18 to 24 hours incubation, and the morphology of the organisms determined, 5 cc. of sterile normal saline solution were added and then by means of a finely pointed pipette the growth was washed from the slant without breaking the surface of the medium. The 5 cc. of bacterial emulsion thus obtained was transferred to a 30 cc. sterile test tube, the number per cc. of the emulsion estimated in one of two ways. The procedure with one of the methods was to mix thoroughly equal parts of the bacterial emulsion, human blood and a solution of sodium citrate and spread evenly on slides. After the slides were dried and stained, a comparative count of bacteria and erythrocytes in several fields was made. Good counting was facilitated by marking the eye piece of the microscope in quadrants. The number of red blood cells in a cmm. being an approximately known quantity, the ratio of erythrocytes and bacteria was used to compute the number of bacteria per cmm. of the emulsion. The other method made use of a Zeiss counting apparatus, proceeding as in the counting of blood cells. After determination of the density of the emulsion sufficient sterile normal saline solution was added to bring about the desired number of bacteria per cc., the whole thoroughly emulsified in the 30 cc. tube by means of a finely pointed pipette with a rubber bulb on one end.

One of the workers in the laboratory rightfully considered the standardization of vaccines as only approximately correct at best, and so abandoned the more laborious methods just described and adopted a simpler method which was time saving. Experience had taught him that a certain degree of opalescence in his vaccine represented approximately 500,000 bacteria with a certain organism. Having obtained this opalescence by adding to sterile normal saline solution portions of the original bacterial emulsion, the vaccine could be further diluted to any desired strength by the addition of proper amounts of sterile salt solution. All things considered, this method of standardization does not seem entirely without merit, and it probably comes as near telling us what the strength of our vaccine is as do any of the others in common use. After all, it must be admitted that the number of bacteria in a given quantity of emulsion does not always determine the therapeutic activity of the vaccine. The individual strains of an organism may vary widely, and it is by clinical tests alone that we are able to gauge with any degree of accuracy

the activity of a vaccine. Moreover, the same vaccine used for two persons often may result in reactions of very different intensity. A conservative therapeutic procedure, then, would be to make the initial dose small enough to be within the bounds of safety, and grade subsequent injections in proportion to the intensity of the reaction.

Three methods of sterilization have been used in our work: heat alone, chemicals alone and heat and chemicals in combination. We have had no unfortunate clinical results with vaccines sterilized in any one of these ways. The combined method of sterilization has been equally active and produced just as good results as the other two methods of sterilization. The combined method renders the vaccine doubly safe, and, since it does not seem to affect the activity of the vaccine, is to be recommended. Vaccines sterilized by heat alone may subsequently become inoculated, as happened several times in our work, even though the clinician using the product had used reasonable care in withdrawing from the container sufficient amounts for injection.

The combined method of sterilization was produced as follows: after the desired dilution of the original emulsion had been obtained, a sufficient amount was drawn off to bring the remainder down to the 15 cc. mark on the test tube. One drop of pure lysol or carbolic acid was added and thoroughly mixed by means of a pipette. The open end of the tube was then closed with a sterile rubber cap which was punctured with a fine needle in order to permit the escape of expanded air when the tube was heated. The sealed tube was then suspended in a water bath maintained at a temperature from 58 to 60 C. for one hour. This was always found to be sufficient to kill all bacteria. The sterility of the product was always insured by puncturing the rubber diaphragm with a sterile needle and withdrawing 1-2 cc. of the newly made vaccine, a part of this planted on agar and the remainder in bouillon. If after 18 to 24 hours of incubation no growth occurred the product was considered safe for administration. The vaccine was either kept in the large tube or transferred to small amber colored bottles, previously sterilized with rubber caps over the mouth, the vaccine injected through the rubber caps.

Slight departure from the methods of preparation just outlined was made with some of the streptococcus vaccines, especially where it seemed necessary to prepare the product speedily. The original culture was made in bouillon and incubated for twelve hours. The bouillon was then centrifugalized in sterile tubes for five minutes at high speed. Following this the supernatant fluid was drawn off with a finely pointed pipette. The residue was emulsified with distilled water and again centrifugalized for

five minutes and the supernatant fluid drawn off, leaving a residue of washed streptococci which were then emulsified with sterile normal saline solution and standardized by one of the methods already mentioned. A vaccine obtained in this manner was almost exclusively streptococcic, even when the culture was from an infection contaminated with a staphylococcus. In clinical use it proved quite as effective as streptococcus or mixed streptococcus and staphylococcus vaccines prepared by the usual methods.

Staphylococcus.—The staphylococcus vaccine has so far proved to be the most reliable, and was the most extensively used. In the cases here reported, doses of from 100,000,000 to 400,000,000 were employed in general furunculosis, simple furuncles, septic infection, carbuncle, acne and abscesses. Of the cases of furunculosis, a large number came from the Lyman School for Boys, among which were not a few refractory cases which had resisted other forms of therapy for a long period. With one exception, these boys received no other treatment, nor was the diet or mode of life readjusted. This gave an exceptional opportunity for estimating the value of the treatment, since any benefit following could reasonably be considered as due to the vaccine and not merely coincident. Twenty-one of these boys treated for furunculosis showed improvement after the administration of vaccines. Forty-nine cases of furunculosis were treated, a total of 174 injections given with an average of 3.55 treatments required to effect a cure. No case failed to be relieved entirely, although in one case it was not until after the third autogenous vaccine had been made, the dose carried to 400,000,000 and repeated every third day did the very severe furunculosis yield. This case was also complicated by pustular acne.

A very severe case was No. 7768, a very poorly nourished, untidy, resistive, suicidal and violent case of dementia præcox. For six weeks he had suffered from crops of boils, and for fully five months had had single furuncles one after another. After opening these boils, efforts to keep dressings in place were flat failures, even when in mechanical restraint, because of his dexterity in freeing himself and his continual restlessness. After the third injection of a stock staphylococcus vaccine no new lesions appeared, and in three weeks there was complete recovery. Only persons who have to handle cases of this character in an excited katatonic can fully appreciate the comfort this brought to patient and physician. This man continued his untidy habits, but up to the time he was transferred to another hospital did not develop any further boils.

Where time is a consideration in the preparation of an autogenous vaccine, and the staphylococcus determined it is good

practice, as repeatedly demonstrated in our work, to inject a mixed staphylococcus (albus, aureus and citreus) vaccine in every case of boils, beginning with 100,000,000 to 200,000,000 bacteria, repeating every third or fourth day and gradually increasing the dose until cure is effected. A rebellious case, however, will now and then require an autogenous vaccine, but in practice these were found to be few.

Four cases of septic infection due to staphylococcus were treated. All of these cases had severe local manifestations as well as pronounced constitutional symptoms which were serious enough to endanger the limb if not the life of the patient. Vaccines were used in conjunction with usual surgical treatment, with the result that improvement was more rapid than is usually expected in cases treated without vaccines.

Three cases of severe bone infection were treated with stock vaccines without result, but after the administration of autogenous vaccines two of them made good recoveries, while the third died following amputation of a forearm. This was the case of an elderly man who in addition to a chronic alcoholic psychosis was in very poor physical condition generally. The case did not do well from the first, and not until the process was well advanced was the vaccine employed. It is also quite probable that the offending organism was not cultivated. There was some reaction from a stock streptococcus, although no streptococcus was found on the cultures made.

Four cases of carbuncle were treated with an average of five injections per patient. The results were quite as good as with cases of furunculosis. Here, again, the vaccines proved of great assistance in handling a surgical condition in disturbed and violent insane persons. Two of these cases constantly disturbed the dressings and would coöperate in no way with the efforts at treatment. One of the cases made a very prompt recovery in spite of the fact that he rubbed filth into his wound at every opportunity. The combined staphylococcus was employed. Active surgical treatment was also kept up.

Four cases of abscess due to staphylococcus received on an average 2.5 injections per patient and with surgical measures carried on simultaneously prompt healing ensued. One of these cases was a long-standing abscess of the breast which had resisted all other efforts at treatment.

During the period covered by this report two typical cases of acne vulgaris were treated with staphylococcus vaccine. One of them did not respond at all, even to large doses, and the second only after the administration of nuclein. Acne bacillus vaccine was not used in either case, but subsequent experience has made it

seem worth while to give the acne bacillus vaccine a thorough trial before abandoning vaccine therapy for this condition.

Streptococcus.—One example of the use of streptococcus vaccine in septicemia, of more than ordinary interest to the writer, was in his own person. The streptococcus had been demonstrated in the circulation, so the diagnosis was positive. The vaccine furnished very prompt relief from pain and all other symptoms. A second case resulted equally fortunately. In this latter case the organism was not demonstrated in the circulation, but was found in the pus. The doses used in these cases varied from 5,000,000 to 15,000,000 bacteria.

A stock streptococcus vaccine was tried in the treatment of erysipelas, but with little or no effect. An autogenous vaccine from a case of erysipelas was employed with apparently good effect, and this was subsequently used as an erysipelas stock vaccine, also with apparently good results. It is more or less difficult to determine the exact value of a vaccine in a disease like erysipelas which is seldom fatal, and especially where other treatment is employed simultaneously. Temperatures often drop suddenly in erysipelas under the ordinary methods of treatment, and, moreover, the symptoms of this disease are frequently not severe. Nevertheless, the prompt results in seven cases of erysipelas treated with vaccines led to the belief that this method of treatment was of value. In all cases the temperature fell noticeably after the injection of vaccine, and in the cases where a subsequent rise occurred a second injection promptly lowered the temperature.

Colon Bacillus.—Three cases were treated with colon bacillus vaccine, all of cystitis, receiving a total of twenty-one injections. The results, while not wholly satisfactory, were not entirely without benefit. The few cases, and the short time which they were under treatment, do not permit positive conclusions. Only one of the cases showed any marked improvement in the urine. In one case the quantity of urine gradually diminished during treatment, gradually returning to the normal amount when the vaccines were discontinued.

Gonococcus.—Among hospital patients gonococcus vaccine was used but little and only in cases of chronic urethritis. These cases made gradual but good recoveries, receiving at the same time local treatment. In acute cases treated outside of the hospital vaccines did not seem to materially shorten the course of the disease, but there was an absence of sequelæ, even in instances where patients used poor judgment and were not always abstemious in the active stage.

Pneumococcus.—In our work pneumococcus vaccine has not yielded good results in pneumonitis. But this may be due to the

fact that without exception it was employed in combating the terminal pneumonia of bedridden patients. In every case, however, the vaccine produced a sudden fall of temperature without marked lowering of the pulse, soon followed by a rise in temperature. All other symptoms were unaltered.

Typhoid Vaccine for Therapeutic Use and Anti-Typhoid Vaccination.

The use of typhoid bacillus vaccine in the treatment of typhoid fever was not sufficiently employed at the hospital to draw definite conclusions as to its value; but a relapse in one case treated at the hospital seemed controlled by doses of 50,000,000 bacteria every fourth day, the patient making a good recovery.

Anti-typhoid vaccination was undertaken on the recommendation of the Massachusetts State Board of Health and was given to employees of the hospital who voluntarily submitted themselves. It was a new thing, and although subsequent good results aided in getting converts, at first but few seemed inclined to avail themselves of the opportunity to become immunized. Many were prepared for almost every imaginable symptom, and indeed everything from true elevation of temperature to sensations as though bugs were crawling over the scalp was reported.

Immunization was accomplished by four injections given five days apart, although inability of the subject to appear sometimes lengthened the period to a week between inoculations. The first dose was always 50,000,000 bacteria, the second 100,000,000, the third 200,000,000 and the final dose 400,000,000. In all cases the insertion of the deltoid was selected as the site of the subcutaneous injection, sometimes alternating from right to left, although in most cases the reaction from the preceding dose had entirely disappeared and the subject preferred the same arm. No case carrying a mouth temperature 100 degrees F. or over was given an injection. The hour of 4 P. M. was selected for the vaccination clinic in order to detect afternoon rise of temperature, if any existed. No woman was given the first dose during menstruation, although this was not allowed to interfere with subsequent injections where no ill results were observed. The temperature was taken in each case before the injection of vaccine and again four to six hours after. A card index of all symptoms was kept, together with names, ages and occupations of subjects.

A total of one hundred and three persons were given the first dose, ninety took the second injection, four leaving the employ of the hospital, and nine refusing further injections. This refusal was evidently due to an hysterical attack in the thirty-eighth patient vaccinated. Although the patient was completely herself after

being talked to for a few minutes by the physician, the nine persons refusing seemed to believe that the vaccine was entirely chargeable with the attack. None of the nine reported any severe symptoms in themselves. Eighty-seven received the third injection, one leaving the hospital between the second and third. Eighty-three took the full four injections; again one left the hospital between injections.

Of a total of one hundred and three who started to take the vaccinations, seventeen from choice did not take the full four injections. Practically all of these failures were among the first to submit themselves when the procedure was looked upon with suspicion and misgivings.

The following table shows the temperature registrations after each injection:

Inoculation	Between 103. & 102.	Between 102. & 101.	Between 101. & 100.	Between 100. & 99.	Under 99.
First	0	0	7	29	67
Second	2	0	1	19	68
Third	1	0	0	7	79
Fourth	0	1	1	2	79

With one exception the elevation of temperature was not associated with especially marked local or constitutional symptoms. One case had a temperature of 102.2 after the second, and again after the third injection, but had it not been for the thermometer he would not have suspected the rise. He was especially free from constitutional symptoms and had a very moderate local reaction. The temperature was normal in twelve hours.

Nineteen cases only reported headache after injection. Some reported it only after the first, some after the first and second, and two after each of the four doses. The first injection most often produced the headache. Slight nausea was reported in but one case. Bad dreams were reported by two after each injection, and difficulty in remembering things the next day was reported by three after their third and fourth injections. These symptoms are given without regard for their value as pointing to possible results of anti-typhoid vaccination. Only twenty-six inoculations out of a total of three hundred and sixty-three had severe enough local reaction to produce redness or swelling extending to the elbow, but in all cases the objective symptoms were out of proportion to the subjective, being much less pronounced. All local reaction subsided promptly. Aching after one or the other injections was the most constant symptom, although it seldom occurred twice and was not severe.

In one case, what might be characterized as a severe reaction

occurred. Two days after the second injection he developed symptoms of influenza, which disappeared before the next dose. After the third injection he developed severe rhinitis, with puffiness of the eye lids, herpes about the lips, general feeling of malaise and lassitude. He remained in bed for two days and was then himself again. He returned for the final dose but suffered no severe reaction.

Summing up, then, the symptoms which may be expected after anti-typhoid vaccination are much less severe and far more transitory than those which may be commonly looked for after smallpox vaccination. The vast majority of cases have a little stiffness and soreness of the arm with slight, if any, headache, and are able to continue their employment without interruption. There is not the chance for infection of the arm, so dreaded in smallpox vaccination.

In an institution for the insane, where protection against typhoid fever is equally to be desired as protection against smallpox, which seldom occurs, anti-typhoid vaccination seems a measure worth while, since typhoid fever is not a rare disease among patients and nurses in hospitals of this character, although not as common as in general hospitals.

XI

MULTIPLE PAPILLOMA OF THE BRAIN (ADENO CARCINOMA)

(PLATES XXX-XXXII.)

By Solomon C. Fuller, M.D.

Intracranial tumors are not rare, though some varieties are more common than others: as, for example, glioma, sarcoma, tuberculoma and syphiloma. Next in frequency, Bramwell[1] places carcinoma. But Blackburn[2] in a series of 1,642 autopsies on subjects dying insane, while finding intracranial tumors in 29 of the cases, did not encounter a single intracranial carcinoma, though many of his cases exhibited carcinoma in other parts of the body. Blackburn, however, did not deny the liability of secondary carcinomatous deposits occurring in the brain, nor the possibility of primary carcinoma of this organ. At Westborough State Hospital, in 422 consecutive autopsies, intracranial tumors have been found in 12 of the subjects. In two of these latter the growths were classed as carcinoma.

If one takes these two series from American sources as criteria, representing as they do 2,068 subjects with intracranial tumor in 31 instances, and of these latter only two, less than .1 per cent. (to be exact, .096) of the total autopsies and 6.45 per cent. of the total instances of intracranial tumors, it will be seen that this form of intracranial growth is not a common finding, at least in brains of persons dying insane.

If with these two series are considered the figures of Knapp[3] dealing with death from malignant growths at Manhattan State Hospital, which were published in 1904, even this small proportion undergoes considerable reduction. Knapp reports 31 cases dying of malignant growth, five with intracranial tumors, but not one of these latter was carcinoma. In the Manhattan State Hospital series, the proportion of deaths from malignant growth to total deaths of the Hospital was one in every 217, a series therefore of 6,727 insane persons dying without a single intracranial carcinoma, although 22 of them had shown carcinoma in other parts of the body.

In the Westborough material, the two subjects with intracranial carcinoma also showed deposits in other regions, in one an extensive epithelioma of the right jaw, in the other a tumor in the left lung. In the first mentioned, the deposits in the brain seemed clearly of secondary origin, but in the second there is some doubt as to their primary or secondary character, this, too, in spite of the not infrequent association of secondary intracranial tumor with tumor of the lung. It may or may not be significant that the extra cranial growth in each of the two cases, barring infiltration of lymphatic glands in

the immediate vicinity, was limited to a single site, while in the brain, in both instances, the tumors were multiple and, relatively, widely separated.

Unquestionable primary epithelial tumors of the brain, however, are among the rarest of new growths affecting this organ, examples of which have been reported by Cornil,[4] Benke,[5] Selke,[6] Nothnagle[7] and Spath.[8] The comparatively recently published case of Kolpin[9] is a questionable one, since the trunk organs were not examined post mortem, although clinically there was no evidence of carcinoma in the pelvis, abdomen, thorax or skin.

The case to be reported in this paper presented multiple papillomatous growths of the cerebrum and a spherical tumor, the size of a small orange, in the left lung. Some of the peribronchial and peritracheal lymph glands were infiltrated; otherwise no tumors were found in the trunk organs and on the skin. The more advanced condition of the growths found in the brain—hæmorrhages and necrotic disintegration—and particularly the tumor intimately associated with the ependyma and projecting into the right lateral ventricle—arouse much doubt as to which was primarily involved, the brain or the lung. In practically all of the reported cases of primary epithelial tumors of the brain, the growths have taken origin from the lining of the ventricles, while secondary deposits are usually along the course of the vessels. The case is of further interest for the reason of the mental symptoms which seemed chiefly, if not solely, accounted for in the multiple new growths; the sensory aphasia, easily explained by the site of two of the tumors; and the character of the growths when the age of the subject is considered.

The clinical history of the case is as follows:

No. 7,984, 35 years of age, a broker's clerk, was admitted to Westborough State Hospital July 21, 1908.

Family History. The family history, as elicited, is negative for mental and nervous disease. The father and mother of patient died from pulmonary hæmorrhage, presumably of tubercular origin; otherwise no information of pathological or heredity importance is reported.

Previous History. As a child, the patient was considered well, escaping the usual children's diseases, but he was rather odd and is said to have been impulsive. On finishing the grammar school he went to work, and, so far as can be ascertained, had given good service and was at least of average intelligence. He had never used alcohol, but smoked to excess. He had been engaged to be married, but three years prior to admission, for some reason unknown to informant, the engagement had been broken by his fiancé. Even since this affair he had acted

"peculiar"—that is, he had given up his former associates and haunts, keeping to himself at the office as much as possible, and also when the day's work was done. He seemed discouraged, lost interest in things and became slack in his work. Finally he got things so mixed at the office—improperly directing correspondence, sending a letter to one firm or customer which was intended for another, transposing names of customers, ill-sorting the mail and mixing up his other clerical work—it was impossible to keep him. This state of affairs had been gradually progressive until about three weeks prior to admission, when his condition became suddenly much worse. He had all along complained of some headache and disturbance of vision, but these were now greatly aggravated. He was also much confused, and speech content, because of the wrong use of words, was frequently senseless and sometimes quite unintelligible. He appeared neither to recognize his mental condition nor his surroundings, and only partially, if at all, his friends. During a comparatively lucid period just before his admission, he remarked, "If I thought there was anything the matter with me (meaning mental disease), I would make away with myself." Within the three weeks he had also developed visual and auditory hallucinations, exhibited a marked memory defect and showed a tendency to wander about, apparently unable to get his bearings. The speech disorder increased and blindness was progressive.

Here On admission to Westborough State Hospital, an emaciated young man of slight build, weighing 97 pounds, exhibited an enlargement of the area of cardiac dulness, a mitral murmur, slight dulness over the apex of the left lung, and pyorrhœa alveolaris. No pathological alterations were detected in the remaining trunk organs. There was some exopthalmus; the pupils dilated and reacting to light; no cooperation in accommodation tests; a divergent squint and considerable defect of vision. An examination of the eye grounds, three weeks later, revealed bilateral choked disc and pallor and puffiness in the lower portion of the temporal field of the left eye. There were no cranial nerve palsies. The skin and tendon reflexes were active; no Babinsky; no Romberg. Muscular tone was poor. There was no special disturbance of the gait, save a degree of trepidancy such as is common with blind persons.

Mentally, the patient appeared confused, although for the most part he remained in bed quietly, seldom saying anything unless addressed. He was unable to give an account of his past life, partly on account of his confused mental state and defective memory, but chiefly for the reason of the aphasic disorder from which he suffered. The speech defect seemed attributable in a great degree to a disturbance of internal language, since the tones of ordinary conversation were heard by him without any difficulty, and yet many of the

examiner's questions and the simplest language of ordinary intercourse frequently seemed as unintelligible to him as a foreign language of which he had never heard. He could not name correctly objects placed before him, but this may have been due in part to defective vision and in part to a degree of astereognosis, for the few times when any attempt was made to name them he first felt them over carefully. A pencil, piece of paper, watch and a small table were each designated as "glassware."

During the two weeks following admission, the speech disturbance and blindness progressed, the latter becoming almost complete. Although not confined to bed, he was not active about the ward. He seemed very dull and several times had soiled himself with urine and feces. He did not make any complaints, and seldom said anything unless spoken to.

Aug. 13, 1908. The following questions and replies will give some idea of the speech disturbance at this time:

Q. What is your name?

A. Its the same thing I suppose. Nothing even. You can put his head on.

Q. How long have you been here?

A. Very seldom.

Q. Do you know my name?

A. Yes sir.

Q. What is my name?

A. As far as I am concerned.

Q. Where were you born?

A. Hally's anker.

Q. What is your occupation?

A. That I don't know. I haven't the slightest idea.

Q. What was your father's name?

A. I suppose you could take it right away from him.

Q. What is your name?

A. M——. (Correct).

Q. What is your first name?

A. George M——. (Correct).

Q. Where did you come from?

A. In this name here.

Q. Who is President of the United States?

A. United States.

Q. Who is President?

A. Oh, the other man is the one that takes it.

Q. What is this? (watch held at patient's left ear.)

A. That will do for that.

Q. What is this? (watch held at patient's right ear).

A. I don't know how much he is dond for.

Q. What are these? (bunch of keys placed in patient's hand).

A. They are all Americans. They are half done.

Etc.

When given paper and pencil, he wrote without direction, George, and later, after much urging, his last name. He did not seem to understand when urged to write his home address, nor when he was asked to write from dictation single syllable words such as God, man, cat, dog. All of his writing attempts were simply a perseveration of his first name, which he wrote in a firm and legible hand. With the left hand he wrote George with ease, although it was somewhat ataxic. He was right-handed.

When requested to name the days of the week he counted correctly from 1-25. He could not count from 25-1, saying, "I don't know how that comes back." He did not seem to understand when requested to repeat after the examiner the names of the days, or even to repeat any of the other common words which were requested.

Aug. 20, 1908. The note is made that his condition is worse. He has been very untidy and now appears totally blind, takes no interest in his surroundings, except when the physician speaks to him, and then he smiles and replies in a paraphasic or jargonic manner, the content of one reply frequently the perseveration of what had immediately gone before.

(Three rather full aphasic examinations, after the scheme of Heilbroner, were made on this man, with certain modifications since our patient was blind, which along with other aphasic protocols made during the past six years will be published at a later date. Attention would be called, however, to certain reactions which were difficult to interpret. As in most aphasic protocols, the faulty reactions increased in direct proportion to the fatigue of the patient, but even when fatigued certain successive reactions were very apt, so that one could not determine definitely whether previous and subsequent faulty reactions resulted from actual disturbance of internal language, or whether they were the result of clouding of consciousness, a clouding which occasionally cleared for short periods. Intent to deceive by faulty reactions, it is believed, can be ruled out, and at no time was there anything suggestive of *Witzelsucht*).

Oct. 6, 1908. The patient has failed physically and mentally. He is now so weak that he can not stand without falling to the floor, and his replies to questions are either indistinct monosyllables or very short paraphasic or jargonic phrases. He is constantly untidy.

Oct. 12, 1908. He has carried no temperature, and since the last note has steadily failed. He lies constantly on his back with mouth and eyes opened, the only movement being to raise his hands above his head in an aimless manner. He makes no voluntary statements, but the attendant reports that on one or two occasions he has

said "yes" although indistinctly, when asked whether he wanted a drink of water. Examination of the reflexes show them still active; the left pupil is slightly more dilated than the right. There is well-defined dulness over the entire left lung.

Oct. 15, 1908, Death. At no time was there an elevation of temperature.

Autopsy, seven hours post mortem.

Anatomical Diagnosis.—Focal thinning of calvarium due to pressure, scant diploë, dura congested and tense, cerebral cauliflower-like hernia along antr. third of longitudinal sinus and over frontal and parietal convexity, marked congestion of pia, cerebral edema, multiple cerebral focal softenings of cortex, multiple new growths involving cerebral cortex and white substance, chiefly latter, choroid plexus and ependyma of right lateral ventricle, general cerebral congestion, increase of cerebro-spinal fluid, congestion of spinal cord; chronic endocardial vegetations of mitral valve; consolidation and tumor of left lung; moderate interstitial hepatitis; splenic congestion; congestion of gastric mucosa and gut; cyanotic kidneys, cystitis; tumor infiltration of peribronchial and mediastinal lymph glands.

Abstract of Autopsy Protocol.—The brain is large, congested and edematous, weighing 1815 grams. The cerebral gyri are flattened, the sulci shallow. The pia of the cerebral convexity presents a slight degree of opacity, elsewhere it is clear. The blood vessels of the convex, mesial and basal surfaces are engorged, but collapse on section, nowhere presenting macroscopic evidence of arteriosclerosis.

Involving the posterior half of T2 and T3, on the left side, is a semi-necrotic, spongy and gelatinous tumor mass, measuring roughly 6 by 4.5 cm. from which exudes, when its slight adhesions to the dura are separated, a semi-fluid, brownish material containing yellowish amorphous particles. A similar tumor is found on the convexity of the right occipital lobe, delimited caudally by a *sulcus semi-lunatus* (Eliot Smith) and extending orally for a distance of approximately 3 cm. This tumor is also slightly adherent to the dura and exudes similar material as already described. In the left frontal lobe there is an area of softening, extending from frontal pole anteriorly to within approximately 1 cm. of antr. central gyrus posteriorly, affecting portions of F1, F2, F3, but chiefly F2. The outer cortex of this area is intact, the softened and somewhat doughy mass chiefly sub-cortical. The second pair of cranial nerves are flattened and atrophic, the left more markedly.

Small portions of the tumor in left temporal region, and of softened area in left frontal, were fixed in alcohol, the remainder of the uncut brain in 10 per cent. formalin.

After formalin fixation, the brain was sectioned on a macro-

tome at intervals of 1.25 cm. In the first section, from before backward, on the left side, an oval-shaped tumor—gelatinous in portions, finely spongy in others, and mottled with blood extravasation—is encountered. The tumor involves the lower cortex and stalk of F2, portions of F3, in the same manner, and fully 3-5 of the vorona. In the second section the same tumor is seen, but now larger, involving nearly all of the cortex and marrow of F2, fully 1-2 of F1, a great part of F3 and about 2-3 of the corona. (Fig. 1*a*) The third section which passes through the knee of the corpus callosum also exhibits this tumor. It now involves the stalk of F^1 and F^2, and all of the corona superior and external to the callosal fibers. In the fourth section, the tumor is considerably smaller and is confined to the corona and a small area of the stalk of F1. In the fifth section, which passes through the anterior commissure, where this structure bridges the cerebral hemispheres mesially, no gross lesions are shown. The sixth section, taken immediately anterior to the *nuclei corporis mamillaris,* reveals a dilated anterior horn of the lateral ventrical, on the right side, in which a finely spongy tumor mass is seen, involving in this plane only the choroid plexus. The seventh section, passing through *the red nuclei rubrum,* exhibits the same spongy tumor in the right lateral ventricle. The ventricle is now considerably dilated and all of the choroid plexus is involved, but mesially the tumor cannot be lifted away from the ependyma, nor is there any sharp demarcation as to where the tumor ends and the posterior 1-3 of Ammon's horn begins. (Fig. 1*b*.) The eighth section passes through the splenium of the corpus callosum, and reveals a still dilated right lateral ventricle filled with the tumor mass which is now infiltrating the surrounding structures. On the left side, another tumor mass, involving the greater part (inferiorly) of T1, T2. In the ninth section, T1, T2, T3 are involved, mesially extending to and implicating the optic radiatons. In this area the tumor reaches its largest proportions, gradually diminishing in succeeding sections to terminate 4 cm. distant from the occipital pole. On the right side of this section (ninth), the tumor of the right lateral ventricle is still shown, infiltrating also the corona. (Fig. 1*c*.) This tumor in succeeding section is shown to be continuous, with the tumor delimited on convexity of occipital lobe by a *sulcus semilunatus* which is described above.

The choroid plexus of the left lateral ventricle, throughout, is unaffected. The cerebellum, pons and medulla show no focal lesions.

The left lung is free from adhesions, but is congested and consolidated. On section of the inferior lobe, the cut surface is moist, and from the transsected bronchioles a blood-tinged, muco-purulent material exudes. The superior lobe is also consolidated, presenting in its middle third a firm, cream-white spherical tumor, approxi-

mately 6 cm. in diameter. When this tumor is sectioned, a grayish core presents, about .5 cm. in diameter and softer than the remaining portions of the growth. In this lung, the bronchus and its main branches are congested, the mucous surface covered with frothy, blood-tinged, muco-purulent material. The left lung weighs 420 grams.

The right lung is also free from adhesions; it is small and aerated, though congested. On section, no pneumonic areas or tumor formations are encountered. Weight, 240 grams.

On the left side, the peribronchial lymph glands are enlarged—not excessively—firm in consistence and pale yellow in color, presenting on section much the same character as the tumor in the left lung, while the lymph glands about the right bronchus are soft and pigmented. In the upper reaches of the mediastinal space a few, firm, pale yellow lymph nodes are found.

The other pathological lesions have been mentioned in the anatomical diagnosis. They seem to have no bearing on the brain tumors, and so are not here described in detail.

Microscopical Examination. The characteristic structure of the tumors in the brain is papillomatous, the stems of the papillæ of a rather loose stroma in which extremely wide capillaries are commonly shown. The epithelial cells of the papillæ are rather generally columnar in shape, although many of them are cuboid. (Fig. 2). Many of the sections show necrotic areas in which the tissue presents a rather granular appearance, with a few persisting nuclei. Microscopically the demarcation of the tumor masses from the surrounding brain tissue is just as sharp as was shown macroscopically. The reaction of immediately adjacent brain tissue is for the most part insignificant. The ganglion cells in alcohol fixed sections stained with toluidin blue as a rule are deeply tinged and atrophic, but there are some shadow forms. There is a glia cell reaction, mostly large glia cells of the amœboid type (Weigert's glia mordant, Mann's stain) and also macrophages of a phagocytic character, but nowhere are these changes excessive.

In the lung the tumor formation presents much the same character. Here, however, the fine structure of the tumor is more compact and the cells of the papillæ more cuboid in shape, and in low-power views the picture is more adenomatous in character. There is little doubt as to essential characteristics, which are the same as those of the brain tumors. (Fig. 3.)

The spinal cord and medulla were without tract degenerations or other lesions of significance.

Of the mental symptoms accompanying cerebral tumors there is a considerable literature. One needs but refer to the frequency with which tumor has been mistaken for general paresis. In the case here reported the focal symptoms, as shown in the

aphasic disorder and blindness, were more prominent than symptoms characteristic of any definite psychosis, and yet the case was not without purely psychic symptoms. Aside from the tumors the anatomical findings in the brain are not especially remarkable, at all events, not sufficient to argue the coexistence of any of the recognized psychoses, so that one is forced to the conclusion that the tumors in the brain were solely accountable for all of the mental symptoms which this man presented, and certainly the focal symptoms are well explained by the site of two of the tumors.

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EXPLANATION OF PLATES.

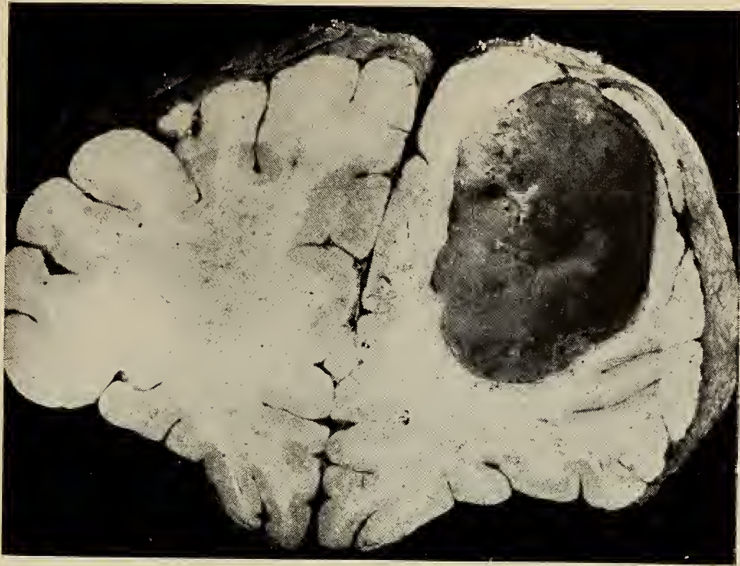
Fig. 1.—*a*. Coronal section taken through one of the tumors. The tumor is sharply delimited. Anterior view.

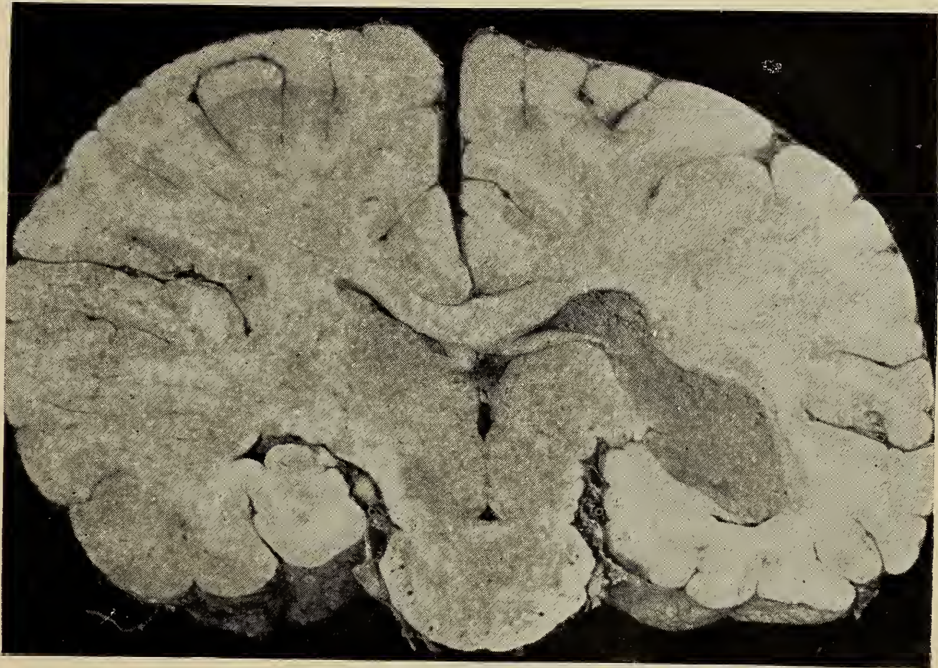
b. Showing a tumor growing from the ependyma into the ventricle and also involving the choroid plexus. Posterio view.

c Showing tumor involving T1 and T2 on left side and the continuation of the ventricular tumor on the right side. Posterior view.

Fig. 2.—Section of one of the cerebral tumors. Alcohol fixation, toluidin blue staining. The illustration is characteristic of all the tumors found in the brain of this case Bausch and Lamb 2-3 achromatic obj., no ocular, bellows extension 180 cm.

Fig. 3.—Section from the tumor in the lung Zenker fixation eosin-methylene blue. Photographic details as in Fig. 2.





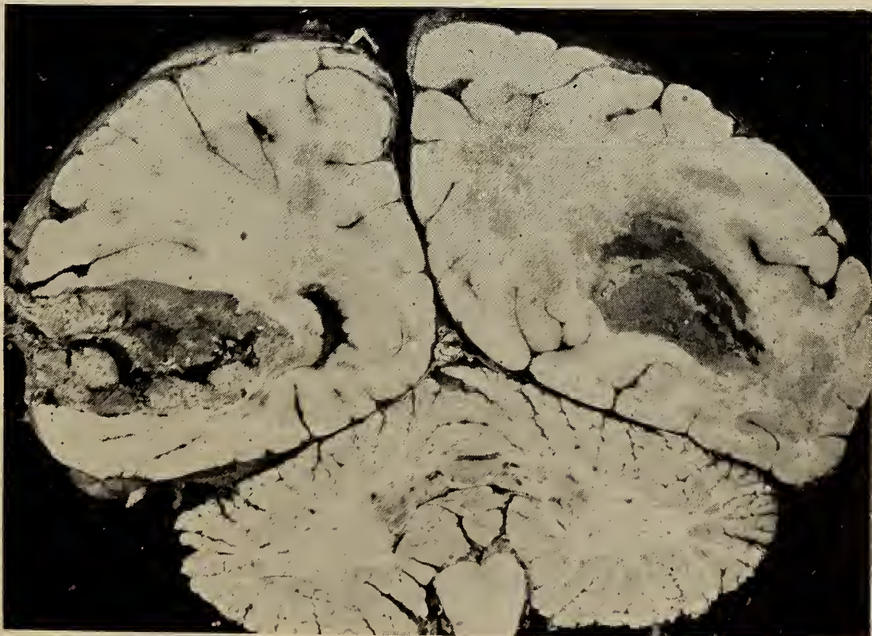


FIG. 1

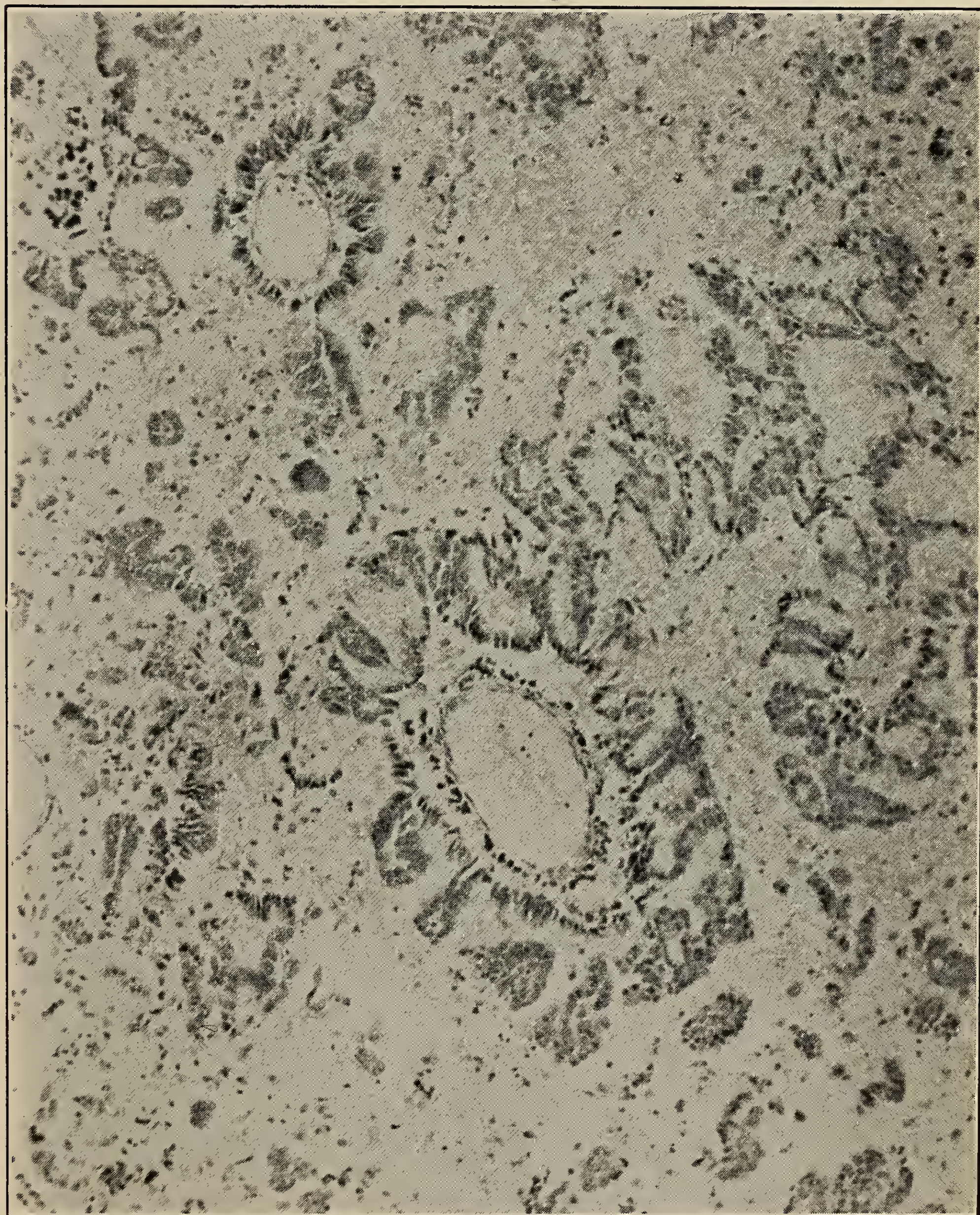


FIG. 2

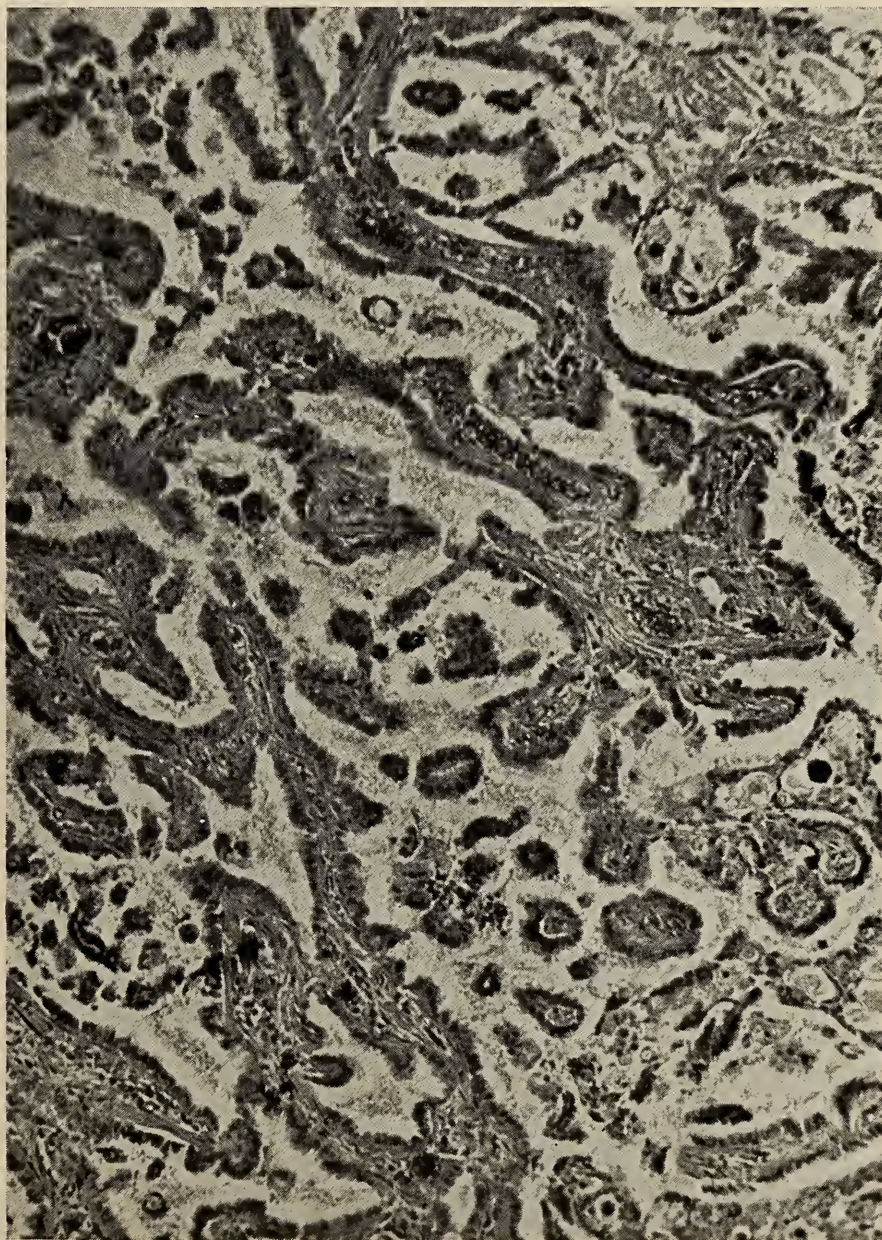


Fig. 3

XII

A CASE OF MONGOLIAN IDIOCY.

By Walter A. Jillson, M.D.

W. S. H., No 10,077. A boy, age 13, was admitted to the hospital on April 6, 1912, as a thirty-days' observation case because of certain psychic manifestations which had made his care and management at home impracticable.

Family History.—Father is living but in poor health, being an arrested case of tuberculosis. Mother died shortly after patient's birth from causes the result of her severe parturition and puerperum, previously having been a healthy, normal woman of normal stock, so far as can be learned. Paternal grandfather living, has twice been an inmate of insane hospitals; paternal grandmother and an aunt are neurotic.

Personal History.—Patient was a full-term, instrumentally-delivered, artificially-fed infant. As the result of instrumentation the head was badly injured, so much so as to cause a grave prognosis as to the possible continuance of life. Though he did live, he was delicate, and backwardness has always characterized his mental and physical development.

The ability to walk and to talk were not accomplished until the age of four; neither has ever been normal. Comprehension was good at a much earlier age. When about the age of four or five he had periods of stupidity; then, for about a year, was very bright, learning rapidly. Following upon associations with other children, he developed a serious, excitable period, when for about two years he had uncontrollable spells, during which he would use profane language and would run his fingers far down his throat. During these years he required special care, and he led an out-door life, with the result that he was able to take up home lessons, but these were interrupted by occasional lapses in his mental condition and behavior.

Instruction in the ordinary branches of common school knowledge has always been under the private tutelage of an aunt, with whom he has lived since the age of five, and has been slow and intermittent because of mental incapacity and numerous physical ailments, to which latter he seemed to be especially susceptible. Speech has always been slow and drawling.

He has sustained several accidental injuries in the past, many of them being the result of his clumsy, awkward ways. Two severe falls, both accompanied by unconsciousness and other

signs of probable concussion, are to be noted, one occurring about five years ago and the other last January, the latter being followed by the train of mental symptoms which made his commitment necessary.

He has always had a childish manner and a tendency to affect a make-believe-like-others attitude in his words and acts, so that, superficially, he has often appeared wiser than his years.

In early childhood he exhibited a propensity to lick various objects, and later on in life was occasionally noticed to bite in a sort of playful way, though never to such an extent as to fail to control himself when remonstrance was made.

Present Psychosis began following probable cerebral concussion resulting from fall on the ice last January. Though he was able to walk to the house and to tell how his accident occurred, he showed speech disturbance within an hour and emesis within two hours, the former disappearing after about six hours and the latter lasting about six or seven hours. He appeared dazed but was at no time unconscious, and once when he tried to get to his feet he fell to the floor.

About a week later, while convalescing and out walking with his aunt, he again slipped on an icy sidewalk and fell, complaining that he could not see well, and again experiencing difficulty in walking. The next morning, while lying on the couch unusually quiet, he was called from an adjoining room by one of his aunts to assist her at some light task. He went to his aunt silently and seemingly was about to assist her, when suddenly and without the least warning he started to bite her. The combined efforts of two aunts, his grandmother and later a man were necessary to restrain his violence. During this episode he not only struggled in his attempts to bite, but scratched, kicked and screamed at the top of his voice.

After being controlled he remained good for about a week, opiates being administered and special observation and care required. Only occasional mild spells of violence occurred during this time. He then relapsed, bit his aunt and three days later was practically uncontrollable, except by force, and so much so that the constant services of a male attendant were required to restrain his violence. Associated with this period were frequent impulses to masturbate.

The boy realized his changed mental condition and often piteously asked his relatives and nurses to help him to be good and control himself. There was mental dulling, and, with excited spells, great talkativeness with tendency to flight of ideas. Previously reliable in his promises, he became unreliable and would excuse himself by saying that he could not help it.

Hospital care and treatment became necessary simply because all connected with him were becoming exhausted with his care.

Here.—Upon admission he was extremely violent and given at short intervals to periods during which he would bite and scratch those about him, was tearfully emotional and homesick, but when spoken to became cheerful, hopeful and optimistic. He answered questions readily, coherently and relevantly, but spoke in a slow, drawling, affected manner; made good responses to simple educational tests, consistent with advancement reported by relatives; and shortly became restless, could not be quieted and examination had to be discontinued.

The following day he was found to be oriented, showed no gross memory defects and gave no evidence of hallucinations or delusions. He was very suggestible, and when biting was mentioned, immediately went towards the examiner, grasped his hands and attempted to bite them. During his biting attacks he bit and scratched everyone who went near him; his face became contorted, his forehead wrinkled and the corners of his mouth turned down and presented the appearance of one about to cry. Alone and unobserved he would become quieter, but as anyone entered his room he would immediately leave his bed, go towards the visitor and attempt to bite.

Physical Examination.

General Condition.—A well-nourished boy, height 4 feet 10 inches, weight 84¼ lbs.; head asymmetrical and features of Mongolian type; palpebral fissures narrow and slanting and well-defined epi-canthal folds; cheek-bones high; ears large and protruding; hair brown. long, coarse, and bushy; hands short, stubby and thick-set, with disproportionate shortening of thumbs and little fingers, the latter showing characteristic incurving; tongue, unlike usual findings in these cases, was short and thick rather than long.

Cephalometrical Measurements.

Measurement	Value
Circumference	52.5 c.m.
Inion to nasion	36. c.m.
Binauricular arc	38. c.m.
Arc of right auricular point to nasion	15. c.m.
Arc of left auricular point to nasion	14.5 c.m.
Arc of right auricular point to inion	14. c.m.
Arc of left auricular point to inion	14. c.m.
Diameter, inion to nasion	17.8 c.m.
Diameter, inion to glabella	19.2 c.m.
Bi-parietal diameter	15. c.m.
Binauricular diameter	13.5 c.m.

Length-breadth index, 80.33 (slightly brachycephalic).

Neurological.—Station faulty, showing inability to stand with feet close and eyes closed without falling after thirty seconds (Romberg); gait awkward and shuffling with tendency to drag toes and to stumble and fall easily; pupils equal, regular and reacted normally; patellar reflexes markedly exaggerated; otherwise nothing of importance.

During period of observation at this Hospital he remained quite excitable, suggestible and violently inclined for the greater part of a week or more, but as time went on he became more amenable to discipline and ward routine, and his vicious, emotional attacks became less frequent and intense, though at no time during his residence here did he become wholly unsusceptible to suggestion when biting was mentioned.

He was discharged improved at the expiration of his period of observation, going to the care of his father, who has since had him committed to the Wrentham State School.

Summary.—The foregoing case appears to us to be one of Mongolian idiocy, our opinion being based upon the physical stigmata as noted in the paragraph describing his general condition. (See Figs. 1 and 2). To his constitutional mental inferiority was added a psychosis and his congenital physical defects were complicated by neurological lesions, possibly the results of parturitional injuries.

EXPLANATION OF PLATES.

Fig. 1.—To illustrate the characteristic Mongolian cast of features.
Fig. 2.—Characteristic appearance of hands in cases of Mongolian idiocy.

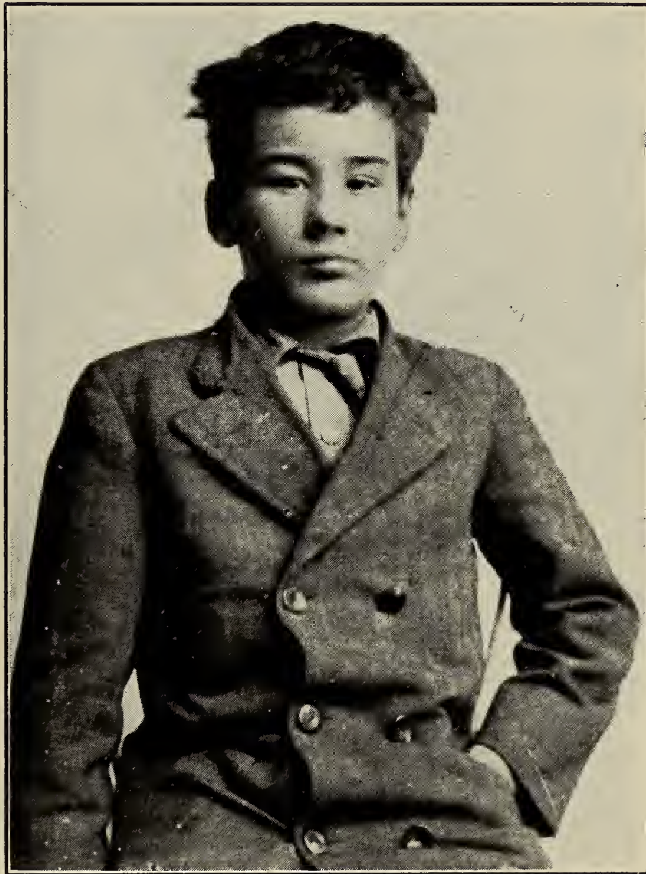
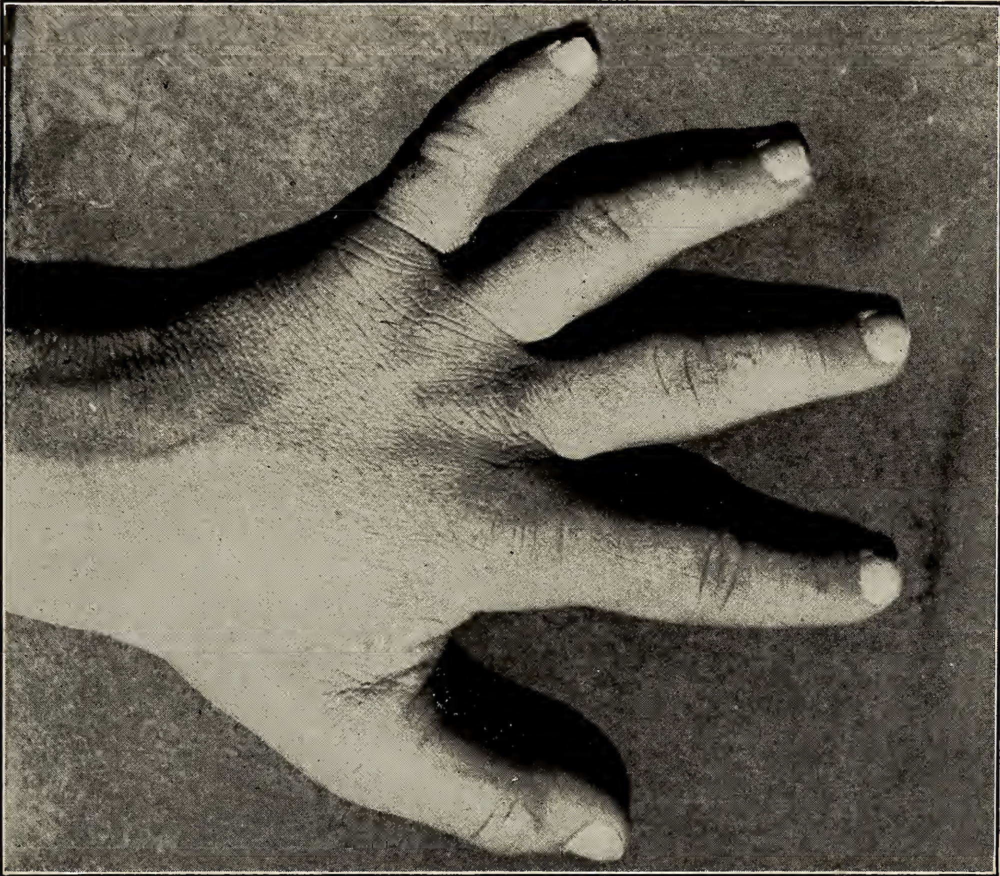


Fig. 1



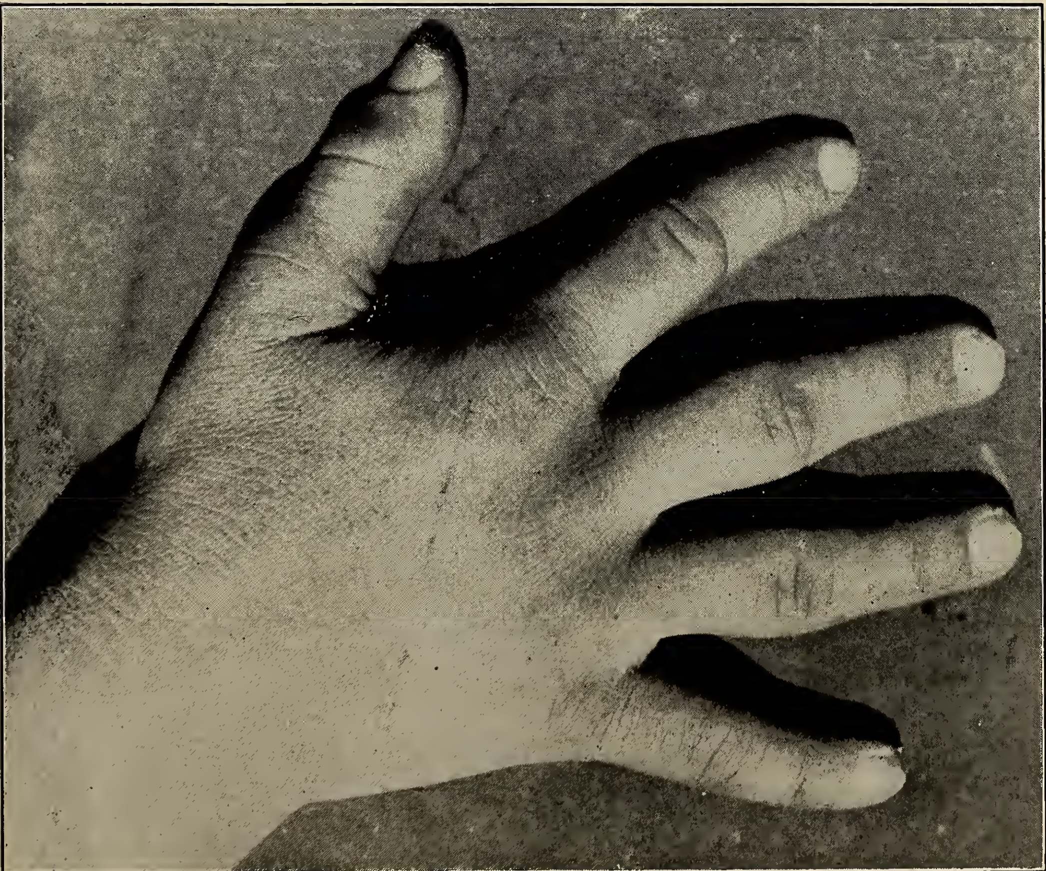


Fig. 2

XIII

ALZHEIMER'S DISEASE (SENIUM PRÆCOX) THE REPORT OF A CASE AND REVIEW OF PUBLISHED CASES*

By Solomon C. Fuller, M.D.

The first published case presenting the combination of clinical symptoms and microscopical changes discussed in this paper was reported by Alzheimer (1) in 1906. Since then similar observations have been recorded by Bonfiglio (2), Sarteschi (3), Perusini (4), Barrett (5), Alzheimer (6), Bielschowsky (7), Lafora (8), Fuller (9), Betts (10), Schnitzler (11), and Jansens (14).

The case described here is included as an example of Alzheimer's disease in the report on a group of 93 brains examined with reference to origin, diagnostic significance and finer structure of so-called senile or Fischer's plaques. Owing to the variety of psychoses included in the earlier communication, the large number of clinical abstracts and the abbreviated manner in which the case was presented, a further report is undertaken. The chief reason, however, for this elaboration and the review of all published cases known to the writer, is furnished by the lively interest shown in the type of mental disorder to which Alzheimer was the first to call attention. The cases from the literature are given below in chronological order, the clinical abstracts in full, and the anatomical findings summarized in the discussion.

While more or less definite mental symptoms and structural alterations are referred to in this paper, the recorded cases are too few—even these showing important variations—to warrant maintaining anything comparable to the paradigm of general paresis. The earlier reports, along with other details mentioned in their microscopical descriptions, emphasize the combination of miliary plaques with a certain basket-like appearance of ganglion cells occasioned by a peculiar alteration of intracellular neurofibrils. But within the present year† Alzheimer himself has published a case in which numerous large miliary plaques of the brain were a striking feature, but in which no ganglion cell exhibited the peculiar type of alteration. (*Vide infra* Alzheimer's second case.) The last recorded observations (Schnitzler's case) note the Alzheimer degeneration of ganglion cells, but not a single plaque was found in the many areas of the brain examined. The busy delirium, excitement and confusion which

* This paper is reprinted by courtsey of the Journal of Nervous and Mental Diseases, where it was first published in the July and August, 1912, numbers.

† 1911.

have characterized the clinical course of some of the cases have been wanting in others, their place being taken by an apathetic dementia. The aphasic symptoms and ideational apraxia have also failed in some of the cases. Nevertheless, when this has been said, it must also be said that the clinical and anatomical findings offer a striking similarity. Although the total number of cases is small upon which the conception of this type of mental disorder is based, the assumption of a clinical type or subgroup is not altogether unwarranted. These cases clearly indicate that psychoses occurring in or about the period of senium are a rich field for clinical and anatomical research. The Westborough case is presented as cumulative data toward the isolation of a type which while lacking at present some of the postulates of a disease entity may yet crystallize into such.

W. S. H., No. 9,378, a man 56 years of age, for some time previous to his final breakdown (about two years), had shown a memory defect, short periods of apparent unconsciousness or dream-like states, verbal amnesia and occasional paraphasia, but had been able to continue at work as a laborer on a farm where he had been employed for many years. His sister states that the memory defect had been gradual, and while at first the short periods of confusion (of a few minutes' duration), in which he spoke in a paraphasic or senseless manner, were only seldom observed, of late these had become very frequent. Recently, even when there was no apparent mental confusion, he often seemed unable to find the proper word or words to employ in ordinary conversation. He would often search for things which lay directly before him, and would use familiar objects incorrectly (apraxia). Within the last six months when he had visited his sister's home, he would relate to her, over and over again, the same experience within the course of a few minutes, apparently forgetting that he had already done so. On going to bed, he would make separate bundles of his clothing, placing one here, another there, in out-of-the-way places, and in the morning could not remember what he had done with his things.

Twenty years ago he had separated from his wife on account of her infidelity. This affair had worried him quite a little, but he formerly never spoke of it to any one. Of late, however, he constantly referred to his wife in conversation, wondered where she was and whether he had done the proper thing in leaving her. As a result he was slightly depressed. It appears that his wife was certainly at fault, while he has always borne a reputation for integrity and industry. He was the father of three children by this union, one of which died in infancy from cerebrospinal meningitis, the others now of age and in good physical and mental health.

About ten days prior to admission to hospital, he had a "mild attack of influenza with which marked mental symptoms were associated. During this attack he had been very restless, particularly at night, roamed about the house, talked much about his work, and went through movements as though employed at his usual daily tasks. Finally, he began to tear the bed-clothing, was manifestly disoriented and confused, apparently forgot movements employed in dressing and feeding himself and lost control of bladder and rectal function, or at least performed these latter functions without regard to ordinary rules of decency and tidiness.

The mother of patient died of apoplexy at th eage of 61, father at about 65 from an affection of the stomach. No other family history of importance elicited.

On admission to Westborough State Hospital, Jan. 27, 1911, he was in a fairly well nourished condition, but looked older than his stated age (56) and presented in his person the appearance of neglect. The gait was rather unsteady but not characteristic of anything more than a general weakness combined with what appeared to be a senile trepidancy; no evidence of paralysis detected. A systolic murmur, best heard at the apex, a full and rapid but regular pulse, firm radial and temporal arteries were present. Respiratory movements were of the costal type; broncho-vesicular breathing and a few râles on right side.

The pupils were slightly irregular in outline but of equal diameter, reacting sluggishly to light, the right more sluggishly than the left. Accommodation tests unsatisfactory owing to lack of proper cooperation. Acuity of vision could not be determined. The patient also failed to cooperate in tests for hearing and for the same reason integrity, or the extent of impairment, of taste, olfactory and tactile sensibility could not be definitely determined. As noted above, there were no paralyses, no contractures. Muscular development was fair but rather flabby. Coordination tests were poorly executed; no Romberg; tendon reflexes increased. No history of lues or cerebral insult was obtained. He had used alcohol moderately.

When first seen by examining physician he was very somnolent and could be aroused only with difficulty. Mentally he was not only dull but apparently indifferent, was disoriented for time, place and persons and was without grasp on his surroundings. Speech reactions were slow, indistinct—often degenerating into a scarcely audible jargon—data frequently incorrect. There was often a logoclonic repetition of the last word of a sentence or last syllable of a word, and with fatigue, easily evoked he became paraphasic. Memory defect was marked for the grossest events of his life, the recent as well as the remote.

Q. What is your age? A. Charles E. G.—.
Q. What is your age? A. Charles E. G.—.
Q. What is your age? A. Fifty-ty-ty-ty.
Q. How old are you? A. Fifty-six.

Q. Where were you born? A. Unintelligible muttering, then finally, Watertown.

Q. Where is your home? A. My home was born in Boston I suppose by my mother and her name was Stagpole. (Maiden name of mother was Stackpole.)

Q. Where is your home? A. I have no home but hopple popple home all the time.

Q. Where are you now? A. I know I am from another room as where from another room.

Q. What kind of a place is this? A. Kind of a wooded play, Etc.

He was able to name and indicate the use of objects shown him—pencil, knife, keys, watch.

When given pencil and paper and directed to write his name and address, he grasped the pencil in a proper manner, placed the paper on a hard surface and laboriously made a few marks but did not form a single letter. Questioned whether or not the marks were intended for his name he replied "yes." Repeated attempts were equally futile.

Jan. 28, 1911, the day following admission, he was a little brighter mentally and for a while during the interview with examiners he answered questions readily and in an orderly manner, but he was still disoriented. He could not tell how long in hospital, the nature of the institution, or remember that he had seen one of the examiners on the evening previous. He showed no concern when informed as to the character of the hospital. "Garfield is president" and he had "never heard of Roosevelt." He did not know whether his wife was dead or alive, at first maintaining that she was alive, later that she had been dead two years. During the interview, he frequently exhibited a verbal amnesia and was occasionally paraphasic. He could name objects shown him—bedroom furniture and small articles such as are carried on the person—and execute simple commands, but easily became confused with more complex tests, such as: three pieces of paper of different sizes of which he was directed to tear up the largest, give the middle sized one to examiner and put the other in the pocket of his bath robe. Go to the window, knock on the pane, come back and sit down, etc.

Feb. 3, 1911. Following the last note he was very noisy and restless at night; frequently confused and destroyed the bedclothing.

Feb. 7, 1911. Rapid physical and mental failure; very unsteady on feet; for two days previous he had failed to respond to all questions; remained in bed, constantly disturbing the bed-clothing or moving his arms about in a purposeless manner. Frequent unintelligible mutterings; extremely resistive.

Feb. 8, 1911. Pronounced clonic spasms of the left shoulder; clouding of consciousness; labored breathing; difficulty in swallowing; extreme resistance.

Feb. 9, 1911. Death with symptoms of broncho-pneumonia. Autopsy 16 hours post mortem.

Anatomical Diagnosis.—Chronic external pachymeningitis, hernia of Pacchionian granulations through the dura, chronic hypertrophic leptomeningitis, pial congestion and moderate pial edema, advanced cerebral arteriosclerosis, regional atrophies of cerebrum (frontal right and left, and temporal left); chronic endocarditis; bronchopneumonia; chronic perihepatitis; chronic perisplenitis; moderate chronic interstitial nephritis.

The brain, with pia attached and before sectioning, weighed 1,445.8 grams. While within the accepted range of normal weights, focal cerebral atrophies were displayed in the frontal regions and in the left temporo-sphenoidal lobe, atrophies not accounted for by previous hæmorrhage, softening gumma or new growth. Section of cerebrum, pons, medulla and cerebellum were negative for coarse focal lesions other than the atrophies mentioned. The larger vessels of the base and many branches of the mesial and convex surfaces of the cerebrum were sclerotic, tortous and did not collapse on section, besides exhibiting atheromatous patches which imparted a beaded effect. The lining of the ventricles was smooth; the ventricular capacity within normal range; cysts of choroid plexus. The spinal pia was slightly clouded and presented several small osteomata, occurring chiefly in the ventral portion of the thoracic distribution of the membrane. The cord shared in the general congestion, other than this offering no gross lesions. The microscopical examination revealed the following:

Mesoblastic Apparatus.—The pia in alcohol-fixed sections stained with toluidin (frontal, precentral, temporal and calcarine regions) shows that the thickening noted macroscopically is due chiefly to a proliferation of connective tissue fibers and fibroblasts, presenting a meshed appearance in which are cells of variable size containing lipoid granules (*Abraumzellen*). The frontal pia presents the greatest number of such cells, though they are by no means scant in the other areas examined. Not infrequently they are found in great numbers in the portion of the membrane immediately adjacent to the cerebrum, but dis-

posed in a single layer which extends for some distance. Infiltrative phenomena, save for an occasional mast cell, fail completely. Hæmorrhages of variable size, though never large, are present chiefly in the frontal distribution of the pia; and clear spaces within the thickened membrane, sometimes beneath and lifting the membrane from the cerebrum, are also seen, the result, in all probability, of the edema noted macroscopically. Practically all pial vessels exhibit a proliferation of the adventitia and proliferative as well as regressive alterations of the endothelium, the latter shown by a rich lipoid content of the protoplasm of cells. The blood vessels of the cortex rather generally, but particularly in the frontal areas, are increased, packets and evidence of budding are common, and in low-power views the richness of the vascular apparatus is at once striking. With high magnifications aside from the progressive-regressive phenomena in vessels of larger caliber, one encounters large cells with a rich lipoid content, of the same general character as those noted in the pia. Such cells are found in the perivascular spaces as well as within the adventitia. There is scarcely a blood vessel in which the protoplasm of endothelial cells is not plainly visible and in which such cells do not show a pigmentation of their protoplasm. In toluidin specimens, the pigment or lipoid content mentioned is either unstained, presenting then its natural yellow color, or is tinged a greenish or bluish yellow. But in frozen sections stained with scarlet after Herxheimer, these lipoid granules are colored a bright red and, because of a like appearance in the majority of ganglion and glia cells, are the most characteristic elements in sections so treated. Occasionally a small cortical vessel presents the appearance of a hyaline degeneration. As in the pia, the vessels of the cortex and marrow are without infiltrative phenomena, save for an occasional mast cell—and of these not more than a half dozen are encountered in all of the sections mustered.

Glia.—The stellate cells of the molecular layer are increased in number, many showing fairly distinct processes and comparatively abundant protoplasm, even in alcohol sections stained with toluidin blue after Nissl. Their general form, however, is better displayed with Mann's eosin-methylene blue solution, Mallory's phosphomolybdic hæmatoxylin, Van Gieson's stain—after bichromate fixative—and also quite well by Bielschowsky's silver aldehyde method, while their lipoid content is best shown by Herxheimer's method. Rod-shaped cells (*Stäbchenzellen*) are quite frequently encountered, particularly in the three outer cortical laminæ, but these appear to be of glial origin, not a few of the so-called trabant or satellite cells being of this form. Colonies of proliferating

glial cells, mostly small elements, are seen throughout all the cortical laminæ and in the marrow, but most numerous in the molecular layer and white substance. Glial nuclei are rather generally increased. Cellular gliosis, particularly in the neighborhood of many blood vessels, is shown by all cell methods, and with Weigert glia fiber stain, also with Mann's stain, a glial fibrillosis in excess of the normal is demonstrated. A striking feature is the absence of any particularly marked satellitosis; indeed, about many ganglion cells showing most advanced degeneration of the Alzheimer type satellites are often wanting. Giant glia cells of the Deiter's variety are conspicuous by their extreme paucity, even in the white substance. The glia "keel" in Weigert preparations is increased in etent and a richer fibrillosis than usual is shown.

Nervous Elements.—Low magnifications of sections stained with toluidin blue, particularly in the prefrontal areas, to a less degree in the other areas examined, reveal a disappearance of ganglion cells, following no definite plan, although perhaps most pronounced among the smaller pyramidal cells. With the oil immersion, striking features are extreme fuscous degeneration of ganglion cells, not confined to the basilar portion but distributed in many instances throughout the protoplasm, including such processes as are visible, large vacuoles in cells, atrophic cells, incrustations, extreme tortuosity of apical dendrites and shadow forms. Striking exceptions are the Betz cells of the paracentral lobule and anterior central cortex which for the most part exhibit a fair preservation. The fat content (lipoid substances) of the altered ganglion cells is best shown in Herxheimer sections, in many cells beautifully displayed in the dendrites. With the Bielschowsky silver impregnation method, easily the most characteristic findings are the presence of a great number of plaques of variable size and numerous ganglion cells exhibiting a basket-like alteration—Alzheimer degeneration. The plaques are also well demonstrated with Mann's solution, acid fuchsin light-green stain, Van Gieson, though indifferently, toluidin blue on frozen sections, and negatives of them are seen in sections stained by the Wolters-Kultschitzky method for myelin sheaths. With Herxheimer's stain on frozen sections—a method in my hands usually unsuccessful for plaques—not a few of these structures were displayed, the whole plaque stippled throughout with fine red granules, paler and smaller than the lipoid granules in ganglion and glia cells and in cells of the vascular wall already noted. The plaques are distributed without special reference to cortical stratigraphy and are also seen in good number in the marrow stalk of gyri. The greatest richness was exhibited in the frontal, left temporal and hippocampal areas.

These structures were also found in the basal ganglia (lenticular nucleus, thalamus), in the brain stem and in the medulla. In the cerebellum no typical plaques are found but not infrequently with the Bielschowsky method, toluidin blue and in sections stained with Mann's solution, single amyloid bodies or groups of such are found in many foliæ, usually in the molecular layer, rarely in the granular, and white substance, around which a reactive cellular and fibrillary gliosis of a mild degree is shown. In general the number and distribution of plaques correspond with the distribution and intensity of general histological alterations. Since these latter are generally diffused through the brain, plaques are also diffused. Recent and old plaques are present, differentiated by glial reactions in their vicinity, and of the same character as I have described elsewhere (9). Very small plaques, not much greater in diameter than a large lymphocyte of the blood stream, and plaques nearly equalling in diameter the depth of a cortical lamina were found, and between these extremes all sizes. The rosette form and the radiary actinomycotic shapes were present as well as mixtures of these types, their finer composition such as I have described elsewhere (9).

Many ganglion cells, fully two-thirds of those in the frontal sections, all of the ganglion cells in the islands of the plexiform layer of the hippocampal gyri, all of the large pyramidals of Ammon's horn, exhibit the Alzheimer type of degeneration. This degeneration consists of a tangled mass of thick, darkly staining snarls and whorls of the intracellular fibrils, evidences of which are also shown in sections treated with Mann's solution. One sees occasionally in preparations where Alzheimer degenerations is demonstrated, finer fibrils, more of the character of normal fibrils, which appear to emerge from the thick bundles. Such pictures suggest the possibility, as Bieilschowsky points out, of an incrustation of neurofibrils with foreign stuffs of pathological metabolic origin. Alzheimer had interpreted these coarse fibrils as the result of a welding together of degenerated neurofibrils which had undergone a chemical alteration, staining by other methods not ordinarily displaying neurofibrils. Fischer speaks of these intracellular alterations as coarse-fibered proliferation of the neurofibrils of ganglion cells (*grobfaserige Fibrillenwucherung der Ganglienzellen*).

Resumé.—While data concerning the early history of the case is meager, this may be said: a man of 56 began to show mental symptoms at the age of 54. These were: defective memory, speech disturbances of a sensory character, transitory periods of confusion and a gradually progressive mental weakening, culminating during an attack of influenza in marked mental confusion,

ideational apraxia and untidiness in the passage of urine and feces. During a hospital residence of twelve days, somnolency alternating with periods of busy delirium, excitement and speech disturbances of a sensory character, were observed; at the end, clonic spasms of shoulder muscles, clouding of consciousness and broncho-pneumonia. Unfortunately, a Wassermann or Noguchi test was not made, but the later anatomical findings did not indicate previous luetic infection.

At autopsy, regional cerebral atrophies and arteriosclerosis of larger vessels were noted. Microscopically, vessel proliferation, progressive-regressive changes in vessel walls but no infiltrative phenomena, cortical devastations, atrophic and richly pigmented ganglion cells and the presence of so-called Alzheimer degeneration in many such cells, cellular and fibrillary gliosis, the former mostly of small elements, the latter chiefly of delicate caliber, were seen, also numerous miliary plaques in all areas of the cortex, basal ganglia, brain stem and medulla, and marked Alzheimer degeneration. No evidence of cerebral lues or general paresis was present. In short, a clinical and anatomical picture in many respects not unlike the severest form of senile dementia and yet in other ways quite distinctive. The writer considers the case one of Alzheimer's disease (senium præcox) and its similarity to other published observations may be seen in the following cases from the literature:

I

(Alzheimer's first case, also reported as Perusini's Case I, translated from Alzheimer's originally published notes, l. c.

A woman, 51 years of age, presented as the first most striking mental symptom, ideas of jealousy concerning her husband. Soon after, a rapidly developing mental weakening was noticed; she would lose her way about in her own home, throw things around and hide herself for fear of being killed.

In hospital, she seemed perplexed, was disoriented for time and place, occasionally complained that she understood nothing and of an inability to express her thoughts. She frequently greeted the physician as a social caller, making excuses meanwhile that her housework was still unfinished. At other times, she would cry out in fear thinking that the physician would cut her or evidence distrust of him, believing that her honor would be assailed. At times she was delirious; tossed the bed-clothing about, called out for her husband and daughter and appeared to have auditory hallucinations. Frequently she shouted loudly for hours at a time.

Whenever she was unable to mentally grasp a situation she

would cry out loudly, this, too, whenever an examination was attempted. Only through repeated and patient effort was anything finally obtained from her. Retention (*Merkfähigkeit*) was markedly impaired. When shown objects she named them for the most part correctly, but immediately forgot them. In reading she went from line to line spelling out the words or read without inflection. In writing she repeated many syllables, left out others, but executed the tests rapidly. In speaking she misplaced words—occasional paraphasia—and perservation was frequent. Many questions asked her were apparently not understood. The gait was undisturbed and use of the hands was equally good. Patellar reflexes were present; radial arteries firm; no increase in the area of cardiac dullness; no albumin in the urine.

In the further course of the disease the focal symptoms were sometimes more pronounced, sometimes less so, but throughout never intense. The patient finally was completely demented; confined to bed with contractures of the lower extremities; and passed urine and feces involuntarily. In spite of greatest care decubitus developed. Death after a duration of 4½ years.

The autopsy revealed a diffusely atrophied brain without macroscopic focal lesions, the larger cerebral arteries sclerotic.

In sections handled after the Bielschowsky silver impregnation method a striking alteration of the neurofibrils was shown. In an otherwise seemingly normal cell there appears, at first, one or more fibrils which on account of increased thickness and increased tingibility stand out prominently. In the further course of the alteration many neighboring fibrils are similarly affected. These, then, form thick bundles which gradually come to the surface of the cell. Finally, the nucleus and cell disintegrate and only a tangled bundle of fibrils remains to indicate the site of a former ganglion cell.

That these fibrils are colored by other staining methods which do not display neurofibrils indicates a chemical alteration in the fibril substance. This can well be, for the fibrils survive the destruction of the cell. The alterations in the neurofibrils appear to go hand in hand with a deposition of not yet definitely determined pathological metabolic stuffs. About 1-4 to 1-3 of all ganglion cells of the cerebral cortex exhibited this peculiar alteration of the fibrils. Many ganglion cells, particularly in the upper cell laminæ, had disappeared.

Throughout the entire cortex, especially numerous in the outer layers, were found many miliary foci, the result of a deposition of peculiar stuffs in the brain substance. These foci may be recognized without staining, but are very refractory to staining methods.

There was a rich proliferation of glia fibers and many glia cells exhibited large fat sacs. There was no infiltration of the walls of vessels, but proliferative changes of the endothelium were demonstrable and occasionally vessel proliferation was encountered.

II

(Bonfiglio's Case, also reported as Perusini's Case IV, translated from the German of Perusini (4).)

Schl. L., a judge's secretary, 63 years old.

A brother was insane. In early life the patient had been a heavy drinker. He had had gonorrhea; in 1870 syphilitic infection and since 1872 had suffered from a spinal affection—sensation of numbness and heaviness in the legs, occasional involuntary passage of urine.

In 1902 he went to hospital on account of his spinal trouble. At that time he looked older than his reported age; the skin of the face and neck was a light grayish blue color (had been treated for a long time with silver nitrate); right pupil larger than the left, pupillary reflexes intact; an old scar on the hard palate; marked disturbance of coordination of upper and lower extremities; impaired muscle sense; Romberg sign. No paræsthesias were present. For the most part he was happy and elated and expressed himself in a friendly and orderly manner. Nevertheless, there was a marked memory defect. When left to himself he spoke in a loud tone, his gaze directed at the ceiling or window. He gesticulated freely, laughed and scolded occasionally and stroked his face and hair in a stereotyped manner. He would carry on imaginary conversations with his judge; hold court and condemn the fancied prisoners to death or drive them from the court room. Often he entertained himself in imaginary social gatherings, conversing with acquaintances of his student days. He declared one person a prostitute, protested against the supposed objections of another or made protective movements against fancied threats. He believed it to be summer and that he had been already a half year in hospital. On account of his mental condition he was transferred on the following day to the psychiatric division.

To be added to the physical findings are: diminution of the strength of the legs and diminished pain sensation in the right leg. He suffered during his residence in hospital quite a little from diarrhœa; he smeared himself with feces and was almost constantly hallucinated (auditory).

June 20, 1904, he was transferred to Karthasbrüll unimproved. On admission there the pateller reflexes were noted as

diminished, the pupillary reactions sluggish. He romanced freely: he was not a pensioner, an acquaintance was a bishop. He conversed continuously with voices. Marked memory defect; marked disturbance of retention. He could remember nothing of his stay in the Munich hospital, nor anything of his thirty years activity as an official of the court.

Oct. 10, 1904, the patellar reflexes could not be elicited. There were marked disturbance of equilibrium with eyes closed, increasing ataxia and marked euphoria.

March 10, 1905. A fainting attack followed a bath, but from which he quickly recovered.

Dec. 13, 1905. Increasing divergence strabismus.

March 2, 1906. Unable to walk, remains constantly in bed.

April 3, 1906 Purulent catarrhal cystis.

Aug. 25, 1906. Chatters the day long with voices.

Dec. 31, 1906. Subnormal temperature; pulse barely perceptible.

Jan. 1, 1907. Exitus letalis.

III

(Sarteschi's Case.*)

. . . A woman, 67 years of age, pensioned overseer of an infirmary, admitted to the insane hospital April 22, 1907.

Her physician sent this history: "For about two years she has been taciturn, melancholy, shown a tendency to somnambulism (sic) rises at night and tries to go out of the house. The first symptoms were talking to herself and a tendency to go out of the house alone, especially at night."

This woman had been an overseer of an infirmary and an attendant in an insane hospital for about 30 years, until the beginning of 1901. The physicians and all the personnel remember her as a woman of excellent character, fair intelligence and honest habits. Physically she was always healthy; no history of the usual diseases. In the early part of 1901 she got a splinter in her right hand necessitating an incision and painful treatment. She was then granted a pension and placed in a family at Lucca. After three years (1904) the disturbances reported above by a certified physician began.

On April 22, 1907, she was sent to the insane hospital.

Physically there was nothing of importance. Mentally her condition uniformly, until the day of her death, may be described thus:

She presents a pleasant face, is complacent, attentive and al-

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* The translation of this case from the Italian was done by Stella B. Shute, A. B., assistant in histology, Westborough State Hospital.

ways affable and polite. When the physician passes she rises to her feet saying, "Good day, Signor." When asked, "How are you?" replies, "Well, and how are you?" and when the conversation ends she withdraws saying, "Come again and thank you, it is impossible to know such things as you wish, excuse me and thank you again." Invited to be seated she fences and gracefully invites the sister who accompanies her to sit instead. Often during the conversation she turns to the sister who is standing and repeats courteously the invitation, "Pray be seated."

Asked her name, she responds with name and surname. To all the other questions which relate to her personal history and orientation for place and time, replies "I do not know, truly I do not remember, I don't remember just now," adding to this constantly confabulations.

Q. How old are you?

A. "I shall be 30"; (at other times) "I don't remember just now. . . the papers have it no more. At times I will go up in the direction when they call me." (At other times) "I will be 30 or 20, I will say so too, I said I don't remember anything."

Q. But do you not know, on the contrary, that you are 67?

A. "Sixty-seven? no, I must be less; even there in San Romano so many times those young lads have called me . . . I know those lads . . . I wish to know no more of them."

Q. Then how old are you?

A. I haven't passed 40.

Q. How old did I tell you you are?

A. I do not remember.

Q. Whose daughter are you?

A. I do not remember any more; of one a once mean . . .

Q. Have you ever seen your father?

A. He came once; I told him to go away; what is there to come for?

Q. Then you know your father?

A. Why I have never spoken to him.

Q. Have your father and mother come to see you?

A. A few times . . . sometimes they came.

Q. What is your occupation?

A. I tend the cows, the sheep, also the stalls where the animals are kept . . . I clean; (at other times) I had as many trades too in Livorno.

Q. Do you know what month it is?

A. Really I don't know.

Q. Is it May?

A. Yes it will be.

Q. What month did I say it was?

A. Oh, I don't remember that.

She seems continually busy as if she were still overseer of the infirmary. When not restrained or led away, she goes to do the cleaning in the water section so that it is continually necessary to drag her away from it; she searches for the key which she says she has lost, and starts to remake the beds already made. She also has the habit of collecting things; she occupies herself in the garden for long periods of the day in gathering small stones upon a bench and suddenly throws them away when the physician sees her.

A few days before death, she became suddenly taciturn, did not reply to questions and remained often motionless. She became weaker without presenting a high fever, and died after three days, on the 28th of January, 1909.

IV

(Perusini's Case II.)

R. M., a basket maker, 45 years old, was admitted to the psychiatric clinic (Munich) Sept. 21, 1907.

A brother was not quite right. The patient himself was always sickly. He had never drank much and denied luetic infection. He is the father of three healthy children and his wife had never miscarried. About ten years ago he had an inflammatory skin disease. Since 1899 a change in him has been noticed: he couldn't work, claiming that he could not see. He forgot easily —when he laid his tools down he could not find them a few minutes later and he would scold the children, charging that they had taken them away. He became easily irritated by small matters; was noisy and cried out; would bang his head against the wall or bed-post and of late could do nothing, for when he began anything he soon became confused and got things mixed. For some little time he could not retain his urine and he miscurated indiscriminately in the room or in his socks. There were never any convulsions with loss of consciousness, but in the last few days there had been frequent cramps in the hands and feet. He would often say, "I can not eat, better I went in the water and at least leave you alone." He made many complaints.

Sept. 21, 1907. Small; poorly nourished; and looks his age (45). Internal organs negative for pathological findings. Patellar reflexes active; sensibility intact; pupils very narrow and react very sluggishly to light and accommodation. Coarse tremor of the hands; tongue muscles without tremor. Speech is drawling with noticeable articulatory disturbance; complete disorientation for place and time. Reckoning ability is very poor: 2x6=14, 3x6=— "I must write that down again, I am as stupid as an ox." What is the name of the German Emperor? "I can't

recall his name." Who is Prince Regent of Bavaria? "Leopold."

A number of three figures given him to remember he could not recall a half minute later. He stated that for a year he had not been able to work for the reason that he got things mixed. With reading and writing tests he was put to his wits' end. "If you gave me a thousand marks I couldn't write." He had never heard voices, nor had ideas of influence.

Oct. 9, 1907. Marked apprehension. He sees the devil in the corner; prays aloud and hides himself under the bed-clothing.

Oct. 25, 1907. Continues apprehensive; is depressed and cries frequently.

Oct. 30, 1907. Could not name objects: Ring—"That is something to stick in, I don't remember what it is—a glove," He could not state the total value of a few small coins.

Nov. 11, 1907. Continuous marked apprehension. He hides himself under the bed cover and is abusive in speech. He follows the physician through the ward and tries to go out with him; sees the devil standing in the corner. He continues mentally accessible, but is disoriented for time and place. He complains of difficulty in thinking and that he can remember nothing. Handwriting is ataxic, with letters left out or misplaced, and quite illegible.

No increase of cells in the cerebro-spinal fluid (3 cells per omm.). In the examinatio nof the blood serum, no complement deviation. Pulse pressure 90—105.

Nov. 18, 1907. No change; continues apprehensive. Transferred to Eglfing hospital.

Nov. 21, 1907. Continuous apprehension; is confused. He walks the ward for hours at a time; unable to find his bed; often refuses food and is untidy.

Nov. 22, 1907. Smears himself with feces and evidences no sense of shame.

Nov. 30, 1907. Scarely answers any questions; makes many complaints and is completely disoriented.

Jan. 14, 1908. Epileptiform convulsions with initial outcry, tonic and clonic spasms.

March 27, 1908. A little accessible mentally. He hides himself under the bed cover. Rapid physical failing.

April 3, 1908. Exitus letalis.

V

(Perusini's Case III.)

B. A., a woman, 65 years old, was admitted to the psychiatric clinic (Munich), March 9, 1907.

A sister was insane. The patient herself had always been

well. She had been married but never had children and no miscarriages. For 15 years she had suffered from an edema of the legs. Since the death of her husband 15 years ago, she had successfully conducted an establishment for the manufacture of liqueurs. For the last three years, as the result of her mental affection, she had been despondent. The present condition is said to be of recent origin. She has had no apoplectic attacks, no attacks of dizziness. Gradually her memory has weakened, comprehension failed and she has given away many of her belongings. She became disoriented for time and place; had no grasp on her surroundings; appeared confused; and of late had been excited. She talked a great deal and cried out loudly.

March 9, 1907. She looks her age (65), is remarkably small, presenting a broad nose with sunken bridge, very thin face, scant hair, short thick fingers and a somewhat cretin appearance. Pupils react to light, though sluggishly; accommodation tests can not be carried out. Patellar reflexes are present. The lower legs are markedly swollen, of the nature of an elephantiasis. She can walk only with difficulty; exhibits, however, no evidence of paralysis. The heart's action is regular. On account of extreme resistiveness a complete examination is impossible. The urine contains a trace of albumin. She is very active, elated and euphoric. Speech content as follows: "Gutele, Memele, Mutele, ja gute, Mamele, Mutele, ja so schon, so schonele." Other than this nothing is to be gotten from her. To all questions she repeats the above quoted words. Likewise when objects are given her to name she always says "Gutele, schonele."

March 10. It was determined, by various means, that she could hear and understand what was said to her. In contradistinction, however, she employed in speech only a few paraphasic words, *e. g.,* "Schuntzer" for Taschentuch and the ever recurring "Mutele, Mamele, Mutele, Gutele." At times she made characteristic smacking noises with the lips and wafted kisses to the physician. It was necessary to feed her, but to this she offered no resistance.

March 15. Under rest in bed and diuretic medicaments the edema has diminished considerably. A mild bronchitis.

March 21. Sleeps a great deal, even in the day time. No mental change. The speech content is the same as noted above. Transferred to Eglfing.

March 22. Pronounced silly euphoria. Prattles the same words constantly.

March 22. Fever; is unconscious. Consolidation of posterior inferior portion of left lung.

March 24. Exitus letalis.

VI

(Barrett's case.)

"E. T. Until he was 48 there had been no mental disturbance. At this age he complained of not feeling well and consulted a physician. The nature of this trouble is not known. When he was 50 it was observed that he would give "foolish" and incorrect replies during conversation. "When asked to do something he would not know how to go at it." Five years later the disturbance had become more marked. He became unable to write. He frequently lost things. He would sometimes ask for objects which lay directly before him. In talking he often used the wrong words, and after he was 67 it became impossible to understand his conversation. At 68 he became a patient in the Michigan Asylum at Kalamazoo. The physical examination at that time showed marked arterio-sclerosis and irregular heart rhythm. Neurologically there was slight asymmetry of the face; Romberg symptom; staggering gait; the tongue was tremulous and deviated to the right; the pupillary reactions were sluggish; the knee jerks unequally exaggerated and there was slight ankle clonus on both sides; there were no peripheral abnormalities of the eyes, except arcus senilis, but it was noted that he appeared as if blind; when asked to name objects he always felt for them. There were many aphasic symptoms. He had difficulty in understanding questions and many of his replies were unintelligible. From the time he came into the hospital he was noisy and restless. He was fed mechanically. He developed a slight febrile temperature with a slow pulse. He became soporous; his head was much retracted and eight days after admission died in coma."

VII

(Alzheimer's second case.)

Johann F., 56 years old, a day laborer, was admitted to the psychiatric clinic (Munich), Nov. 12, 1907.

Patient was a moderate drinker. Two years previously his wife had died, since which time he had been quiet and dull. For the last half year he had been forgetful; lost his way easily; could either not perform simple tasks or executed them awkwardly; stood about in an aimless manner; took little interest in his food but ate ravenously whatever was placed before him; could not make even a simple purchase; and no longer bathed. Sent by the overseers of the poor.

Nov. 14, 1907. Pupillary reactions normal. Patellar reflexes rather active; no paralyses. Speech was remarkably slow but without articulatory disturbance. He was dull, slightly euphoric and comprehended poorly. He frequently repeated the

questions asked him instead of giving answers, often repeating them over and over again. He could reckon the simplest mathematical examples only after long mental effort.

When asked to point out different portions of the body there was frequent perseveration. Immediately after speaking of the knee-cap, a key was called a knee-cap, likewise a match-box which was also rubbed on the knee when asked what one did with such a thing. He did the same with a piece of soap. Other requests such as lock the door and wash the hands were correctly complied with, although slowly and in a clumsy manner.

Sept. 20, 1907. To the question "What color is blood?" he answered "Red." Snow? "White." Milk? "Good." Soot?—

He counted correctly up to ten, could name the days of the week, give the names of the months and repeat half of the Lord's Prayer, but could go no further. 2 x 2 = 4, 2 x 3 = 6, 6 x 6 = 6. He could tell the time of day by the watch, and button his coat correctly. Given a cigar he placed it in his mouth, struck a match, lighted the cigar and smoked, all of which he did in a proper manner. Given coins to identify he examined them from all sides then said: "That is, that is, we have here, here, here—." He could not name a match-box. He knew the use of a mouth harmonica, a dinner bell and a purse, but he could not name these objects. From a number of objects placed before him he could pick out a match-box and a lamp, but failed when requested to select a brush and a corkscrew. Requested to bend a knee he doubled a fist. There was no impairment of ability to repeat words after examiner.

How many legs has a calf? "Four." A man? "Two." Where does a fish live—in the woods on the trees? "In the woods on the trees."

Lumbar puncture: No cellular increase; no complement deviation in blood or in cerebro-spinal fluid.

Eyegrounds: Ill-defined boundaries of the right papilla; left eye normal findings."

Sept. 23, 1907. Gets up and urinates near the bed.

Oct. 8, 1907. When asked to write he did not take a pencil, but a match-box, with which he attempted to carry out the request. The focal symptoms show a great variation in their intensity.

Nov. 15, 1907. Elated; laughs much; eats a great deal; sits around stupidly, but actively moving his hands, pulling his blouse or nightcap apart; at times tearing everything in the way of bed linen or clothing and cramming the pieces into his mouth.

He is still able to repeat words after examiner. Objects are used incorrectly, *e. g.*, brushes his coat with a comb. When given a key and told to unlock the door he goes to the door but ap-

parently doesn't know what to do. In writing his name he repeats letters. He could not be gotten to write anything other than his name.

When objects are pointed out to him to name he makes no answer or repeats senselessly the request, doing so at times over and over again. He makes no spontaneous utterances. If one irritates him by taking away the towel which he is chewing he sometimes becomes violent.

When he was asked to make certain movements with the hands he repeated the words of the request. When the movements were made before him he looked on as though not comprehending. Asked to place the thumb with outstretched fingers to the tip of the nose—"thumb the nose" (*Langenase*)—he thumbs the chin instead; to throw a kiss he holds the hand in a rather constrained manner as though making a military salute, nevertheless brings the hand to the mouth.

Dec. 8, 1907. Manifest deterioration. He gets out of bed frequently; busied with his bed things.

Wassermann reaction negative in blood and cerebro-spinal fluid. One cell in a c.mm. of cerebro-spinal fluid.

March 2, 1908. Told to wash his hands he does so correctly, but continues washing them indefinitely and when told to turn off the faucet holds his hands beneath it. Asked to seal a letter he attempts to light the candle with the stamping die, later warms the wax and presses it on the die. Given a cigar to light he rubs it on a match-box.

March 4, 1908. He is restless and imparts the impression that he is delirious. Constantly packs his bed clothing in a bundle and will leave, doing this the entire day with perspiration streaming down his face. He is now constantly resistive, complying with no requests. When given a hair brush he licks it. Almost no spontaneous speech.

May 5, 1908. Other patients have taught him to sing "*Wir sitzen so fröhlich beisammen*.' but he has to be frequently prompted with the words, although the melody is carried fairly well.

May 12, 1908. A physical examination shows no pathological alterations in the pupils or tendon reflexes. The papillæ of the eyegrounds are noted as normal. (Right papillæ somewhat abnormally formed.) When questioned he usually answers "yes" and then laughs in a demented manner. He can still repeat after examiner, at times exhibiting a perseveration in so doing. Certain movements such as spreading or twisting the fingers he imitates correctly, though awkwardly.

June 12, 1908. He goes for a walk in the garden. So long as anyone accompanies him he does not stop, going at a rapid

gait with the perspiration streaming from him, constantly waving the tail of his coat which he grasps firmly. When in bed he is constantly waving the bed clothing about, grasping them firmly in the meanwhile. When he was pricked with a pin or the soles of his feet tickled, for a long time he did not react, but finally struck at the physician. He scarcely speaks a word now.

It is remarkable, nevertheless, that in spite of his pronounced dementia there is no disturbance of ability to execute gross movements, nor is there noticeable ataxia or weakness in the extremities.

Dec. 14, 1908. Passes feces and urine regardless of where he may be; no longer talks; always busied with his bedding or blouse. When another person begins, he still sings "*Wir sitzen so fröhlich beisammen.*"

Feb. 3, 1909. An epileptiform attack of a few minutes' duration; twitchings in face.

Feb. 6, 1909. Right facial weakening.

Feb. 9, 1909. Disappearance of facialis phenomena. Re-examination of the blood and cerebro-spinal fluid gave the same negative result as formerly. He is very resistive to whatever is done for him; constantly busied with bed-cover or with his blouse; no longer speaks or complies with requests.

May 31, 1910. He has lost slowly but steadily in weight. Always busy in the same manner with the bed-clothing.

July 29, 1910. Epileptiform convulsions of two minutes' duration.

Sept. 1, 1910. Rise of temperature to 38.5 C.; crepitant râles over the lungs.

Oct. 3, 1910. Death from symptoms of pneumonia.

VIII

(Bielschowsky's case.)

Mrs. B. became ill at the age of 58. From information furnished by relatives, a gradual change was noted, following the death of an only son. She was very forgetful, lost her grip on the management of her household and finally was unable to perform the simplest housework. There had never been periods of excitement. To be sure, the information furnished by friends was not as full as might be and was rather untrustworthy. There was no apoplexy throughout the entire course.

Admission to Gitschner Street Hospital (Berlin) was not until two years after the onset of the malady. Physically the patient offered no symptoms worthy of note. The pupils were of average diameter and reacted promptly to light and convergence. The eye grounds were normal. Motility and sensibility of the extremities

were shown by repeated examinations to be undisturbed. The gait was cumbersome and slow but revealed no paralytic disturbances. Patellar and tendo Achillis reflexes were active; no Babinski; negative Wassermann reaction.

The mental condition was that of an advanced dementia. Especially striking were the extreme memory impairment and disturbance of retention. She did not remember the most important events in her life. Her vocabulary was very limited. On many days she replied to questions only with "yes" and "no," but she could correctly repeat words after examiner. In these tests there was frequently a perseveration of the last spoken word. Objects placed before her she does not name spontaneously. Still when pictures are shown, the wrong name given to a picture is immediately detected.

When requested to imitate with the arm or leg certain simple movements she generally succeeds, nevertheless, in an awkward manner. With complicated tests she fails completely. Instead of winking the eyes or making threatening movements as requested, she scratches the bed cover. Requested to strike a match, the movements are inappropriate. How well she understood the requests could not be determined with certainty, but from the anxious facial expression and embarrassed behavior it was evident that the patient was conscious of her defect.

During her stay in hospital no noteworthy change developed. After about four weeks she became very apathetic and then passed into a comatose state, during which she died.

IX

(Lafora's case.)

William C. F., a veteran of the Civil War, was admitted to Gov't. Hospital for Insane, Washington, D. C., when 58.

After the war the patient was very much exhausted. Later and for many years, he had been employed as a bill-poster. He was a heavy drinker.

His present illness began in Nov., 1906, at the age of 56. He evidenced persecutory delusions; was excited; incoherent; and demanded protection. Some weeks before this he had made marriage advances to several nurses. Soon after the onset of his illness he became untidy with bowel and bladder movements and would smear his face and body with feces. Once, during an excited period, he threw an iron bar at an attendant. He was always markedly disoriented, could not give the name of his physician or nurses, nor tell where he was. Often he could not find the way to his room.

Sept., 1907. He attempted to run away. At this time he was more careful in dress and generally more cleanly.

During the further course of his illness there were transitory periods of excitement and confusion. Several times he attempted to escape from the hospital. Disturbance of retention appeared early.

Jan., 1908. He could no longer find his way to bed or his place in the dining room.

Sept. 23, 1908. Attacks of dizziness from which he recovered on the following day.

Oct., 1908. He kept to his bed and frequently refused food. Echolalia and long-continued perseveration were often observed. Sleep was always good. He took no interest in his surroundings; often talked and laughed to himself. Dementia, disorientation, indiscriminate bladder and bowel movements and untidiness were progressively worse.

Jan., 1910. A urinalysis revealed albumin and granular casts.

March, 1910. He often ate his excrement. Sometimes he was depressed, sometimes excited. To this period belongs the following dialogue between the patient and nurse:

What day is it? "I don't know, ma'am."

What date is it? "I don't know that, miss, man, Mr."

What month and year? "Right under this corner, Mr., man."

How long have you been in this hospital? "Right there, miss, is all that I know, I tell you."

What kind of a place is this? "I don't know, I know nothing, absolutely nothing, nothing, nothing, nothing."

Where is it? "Hell, hell, hell, hell, hell, hell, hell, hell, hell."

Where did you come from? "I have already told you. I was in Lancaster; I don't know anything."

Patient then said he heard a beautiful lady speaking to him.

What did she say to you? "I don't know whether I told you or should; it is fine, fine, beautiful, beautiful."

Later, he again frequently ate his excrement; was untidy; disturbed his clothing; moved about in an aimless manner or remained the entire day in bed.

Jan., 1911. He had to be fed. Occasionally he disturbed the linoleum on the floor and would chew it vigorously.

Feb., 1911. Very feeble; dementia progressing rapidly.

March, 1911. He received a violent blow from another patient, nevertheless after a few days his appetite was again good and he seemed to feel well.

March 13, 1911. Anuria, which continued with slowing respirations, cyanosis, inability to swallow, and unconsciousness until death, March 14.

X

(Westborough State Hospital case, *vide supra.*)

XI

(Betts' case.*)

"C.F., female, milliner, 55 years, United States, single, somewhat intemperate. Admitted May 23, 1901. (Buffalo State Hospital, N. Y.) Onset somewhat indefinite at about 40 years, with marked memory defect and disorientation, with mild simple depression. During her first four years' residence she merely showed extremely defective memory for both recent and remote past, then gradually became untidy and restless, resembling a case of general paresis. A note made January, 1905, states: "Memory defect very marked; speech rambling and ataxic. Test phrases very poorly handled; writing tremulous and almost illegible. Station steady; knee jerks normal. Marked tremor of hands, tongue and facial muscles. Pupils slightly unequal but react well to light and accommodation. A few months later she became very filthy and destructive in habits. Was quite disoriented, very restless and resistive. She showed progressive physical failure and in October 1908, a diagnosis of pulmonary tuberculosis was established. During the last few months of her illness she showed great tremor and resistiveness. Died Oct. 31, 1908."

XII

(Schnitzler's case.)

Mrs. Van D., aged 34, was first admitted to the Polyclinic (Utrecht) Dec. 10, 1908.

From her physician and husband the following anamnesis was obtained: Formerly the patient was always well. She had been married nine years. Early after marriage, the husband states, she gave evidence of not being up to the average mentally, "somewhat stupid," otherwise she was an orderly housewife, the household carefully looked after, and she displayed an interest in the little gift shop which her husband conducted. She did not use alcohol. Of four children borne two are living and well, the other two died at the ages of three months and three days respectively. There had been no miscarriages. The last child was premature (seven months). Menses regular.

After the last parturition her husband reported that she was quieter than usual, often sat unemployed, slept a great deal and on the slightest pretext would revert to the loss of her child. In short, her condition was one of tearfulness and somnolency. The onset of the disease dated back 2—3 years. The indolence noted grew worse gradually, besides, she took on flesh rapidly—

* In reply to a letter of inquiry concerning this case, Dr. Betts writes: "In regard to aphasic symptoms there is no note made in clinical history except that the writing was practically illegible. Anatomically the cortex showed a very considerable number of plaques and Alzheimer degeneration was very marked and extensive."

"grew thick in face and body." As the disease progressed she showed less and less interest in her surroundings, was untidy, could sleep through the entire day, spoke but little, acted in a childish manner—laughing at everything—and neglected the children—allowed them their way in everything. Her appetite was always good. In the management of her household she gradually became incompetent; at first she could do simple cooking, but finally even this was impossible; she would either leave the stove door open, or allow the food to burn, or forget to add water, etc.

Finally she became "like a little child." Often when she had made a mistake she realized what she had done. There were never any excited episodes or anxious states.

Status præsens.—On admission to the clinic the patient was remarkably stout. The face appeared bloated, the skin of face on palpation felt somewhat myxedematous, on the forehead fine, closely applied wrinkles. The trunk was plump, disfigured by heavy folds of the skin, the arms and legs formless masses. The skin was everywhere thickened and pitted on pressure. The hands were the least swollen, the distal phalanges somewhat pointed. The color of the skin was not pale but a diffuse rose color. The growth of hair was not heavy; the nails showed nothing abnormal; many carious teeth. Body weight 100 kg.

The patient spoke slowly, now and then somewhat faster. One got the impression that she required for her answers a rather long reaction time, although when once started she was more fluent. Movements were correctly executed but a long time was required before she attempted them.

A small, somewhat hardened thyroid gland—surgically operable—was palpable. The heart was somewhat enlarged; urine negative for albumin and sugar. Temperature normal; pulse 90-100.

The patient appeared to the other patients as abnormal, she was continually somnolent. The right hallux was permanently in Friederich's position. No further physical symptoms noted. Eyegrounds normal. The patient laughed in a childish manner at everything that happened about her. She wanted to go home, and several times ran out of the ward; wanted to visit her relatives but was easily pacified when told that she couldn't, nevertheless she went all the while to the door. Otherwise she gave no trouble to the nurses.

Dec. 17, 1908. Test for calculation ability.

5 x 6 = 30 in 2 seconds.
15 x 3 = 49, 45, in 7 seconds.
12 x 7 = 48 in 6 seconds.
14 x 3 = 42 in 21⅕ seconds.

17 x 4 = 68 in 24⅘ seconds (reckons 4 x 10 = 40, 4 x 7 = 28, 68).

12 x 8 = 96 in 4⅗ seconds.

18 x 3 = 54 in 9⅗ seconds.

16 x 7 = (reckons 7 x 10 = 70, 7 x 6 = 42 does not add together).

21 x 11 = after 12 minutes, "I can't reckon so fast."

Counts from 1—50 correctly in 27 seconds. From 50—1, leaving out 22, in 62 seconds.

Repeats the names of the months faultlessly in 5⅗ seconds; counts 1—20 in 5⅕ seconds, from 20—1 correctly in 10 seconds.

Examination with Heilbronner's pictures.

Lamp.

1. Don't know.
2. Don't know.
3. Lamp, it is always the same.
4. Also a lamp.

Church.

1. Church with steeple.
2. (What goes with it?) Points out approximately correctly.
3. (What goes with it?) Points out.
4. (What goes with it?) Points out.
5. (What goes with it?) Points out +. Says, The little house, the things (are the windows).
6. (What goes with it?) Points out +.
7. (What goes with it?) Points out +.
8. (What goes with it?) It's the same.

Fir tree.

1. Fir tree.
2. (What goes with it?) Don't know.
3. (What goes with it?) Points out.

Cannon.

1. Don't know.
2. The same thing with a star in it.
3. The same don't know what it is, but differentiates it from something else.

Wheelbarrow.

1. Don't know.
2. Don't know; differentiates +.
3. Wheelbarrow.
4. Differentiates +.
5. Differentiates +.

Boat.

1. Don't know.
2. Don't know; differentiates +.

3. Don't know; differentiates +.
4. Don't know; differentiates +.
5. Boat.

The patient answers quickly, the examination interests her (observations noted by others, not defective, just as patients in every detailed aphasic examinations are designated as childish), she always wants to look at the next following picture and turn the leaves of the book herself.

She was shown weather forecasts cut from a newspaper (*The Telegraph*) such as, man with an umbrella or a lady with a sunshade, and the like, printed above *The Telegraph's* forecasts for the day. The patient looks at the picture, "A man with an umbrella," she says. At first she reads the printed matter in a verbal, paraphasic manner, then correctly. The pictures are all alike, "From a leaf calendar," she adds spontaneously, "are they not?"

(Do you know *The Telegraph?*) "Yes, there is a newspaper called *The Telegraph* and there is a telegraph where one may send messages."

"Yes, the pictures are from the newspaper."

(What is that there?) Reads the print in a low tone; "That is on all of them."

(What indicates rain?) "The man with the umbrella."

She then reads a notice from the paper without a mistake.

The general impression is won that, along with the retardation, there is a defect; the dementia, however, is manifestly not great, not sufficient to offer an explanation for the totality of her symptoms.

With the Bourdon test—underlining certain letters in a reading test—the results in general are poor; certain portions, however, are faultless.

Dec. 18, 1908, the patient was exhibited before the medical society by an assistant of the surgical clinic, where she ran out of the waiting room, necessitating the sister's running to the end of the corridor after her. She wanted to visit her relatives. She sat on a chair, frequently asleep during the demonstration, her movements very slow.

Dec. 19, 1908. She knew that she had been in a large hospital the day before, which reminded her of a theater, though it was not; that many gentlemen were seated there and that she was somewhat anxious. She remembered sitting on a chair, and that the assistant was there; that one of the gentlemen had spoken—the professor (incorrect); that he had said that she had grown stout in the last 10 years and that she was 45 (correct) and that she had corrected him as to her age. She was very positive that it was the professor who had spoken.

Who showed you the pictures? "I don't know."
What was shown you? "I don't know."
Did you look in a book? "No."
A small black book? "No."
With pictures? "Oh, yes."
What were the pictures in it? "I don't know now."
Animals or the like? "A wheelbarrow."
And houses? "Yes."
What kind of houses? "A house with a tower."

Dec. 28, 1908. Since admission the patient has lost 2.2 kg; for the last 10 days she had been taking desiccated thyroid gland, one dose a day.

She did not remember that during the first days of her hospital residence she continually wanted to leave. Her face was less bloated and she slept less, although by 7 p. m. she was ready for bed. Simple examples she reckoned readily. She thought the other patients made fun of her size.

After three thyroid tablets daily had been administered, her weight reduced by 5 kg. and perhaps less retarded, she was discharged Jan. 6, 1909, cautioned to continue the thyroid treatment and to return for observation.

In spite of our advised treatment, the mental condition gradually grew worse and at the suggestion of her physician she was again admitted to the clinic, April 13, 1910.

On this admission: No hemianopsia, bitemporal or otherwise; lateral movements of eyes coordinated; no nystagmus. The eyelids could not be widely separated; they were swollen. There were transitory indications of right facial paresis without involvement of the frontal muscle. The pupils were equal and circular, reacted to light and convergence. Ophthalmoscopic examination revealed no abnormalities; plantar reflexes normal.

In walking her movements were rather clumsy, still without characteristic gait disturbances; the right hallux always in Babinski position. Speech was slow and there was difficulty in pronunciation. She answered correctly simple questions, such as "When did you come here?" "Do you know me?" etc., and she counted the number of keys on a ring. She had no pain. She ran to the door, wanting to leave. The skin was dry and extremely thick; on the back, blue marks. Lying in bed drinking a glass of water, the water would run down her chin on her clothes. Swallowing was difficult.

She repeated correctly 555,666 and *Spoorwegmaatschappy*, but with a slight tremor of the voice. She counted correctly from 1—20 in 18 seconds, from 20—1 in 60 seconds but it was necessary to stimulate her frequently. With this there was a slight tremor of

the legs. The examination established no evidence of aphasia, the special examinations for signs of apraxia (raise the hands aloft, point above with the index finger, grind coffee, wink the eyes, make threatening movements) also gave negative results. The threatening movements she accompanied with a dreadful roar.

April 25, 1910. Elevation of temperature with symptoms of pneumonia; marked somnolency. She lay abed with mouth opened and double ptosis. When the lips were touched, reflex closing of the mouth. Swallowing was difficult. After many repetitions she undoubtedly understood what was said to her. Reactive movements were carried out slowly and incompletely. Of neurological symptoms there was a distinct paresis of the fingers of the left hand. The finger movements of the right hand and the toes of each foot were unaffected. Besides, there was indication of hand clonus on the left side. There was no hypotonicity of the extremities.

For a few days following, the clinical symptoms on the whole showed no change. The attempts to speak gave one the impression of a patient suffering severe bulbar disturbance, only a vocal tone produced.

April 20, 1910. She recognized objects with left hand without much manipulation. The finger movements of the right hand and the movements of the toes undisturbed. The ptosis of the left eye was less pronounced. The temperature inclined to normal.

April 22, 1910. She is incontinent, complains of pain in the side (probably from lying) decubitus; deglutition bad, best with semi-solids.

April 23, 1910. Temperature again elevated. General condition as noted above. No change in neurological symptoms. Death.

XIII

(Jansens' Case.)

A woman of 55 was admitted to hospital (Endegeest, near Leyden) March 2, 1907.

According to information furnished by the family and her physician, she gradually became so demented, following a delirium of several days' duration two years ago, that not only was she unable to manage her household affairs, but she herself had to be constantly watched over and cared for. During the last few months she had talked but little. One morning six months before admission, she was unable to get out of bed, the right leg and right arm were paralyzed. The paralysis, however, soon disappeared, but since then the mental symptoms had grown much worse; the dementia had become more pronounced and she spoke

almost never. Of late she had repeatedly assaulted her daughter, and above all she had been very restless. The husband further reported that formerly his wife was cheerful and robust, but always a bit obtuse; that she could neither read nor write. Hereditary factors were wanting.

Upon her reception at Endegeest she was put to bed, but immediately left it. She was very restless, went about aimlessly, sat on the beds of other patients and busied herself with the bed clothing after the manner of a senile dement. She expectorated all about her and defecated on the floor.

The most striking symptoms, however, was a characteristic speech disturbance which showed itself in spontaneous as well as in reactive speech. For hours at a time she would utter in a monotonous tone "puk, puk, puk." This perseveration appeared more clearly in the form of a definite word-spasm (*Logoklonie*) in her answers to questions. Requested to name a key which was held before her she said: "that is then, then, then then" and to the question "How old are you?" "Das weiss ich ni, ni, ni, ni, ni." To many questions there were no answers or any other kind of reaction; reactions came only after a long while and after many repetitions of the questions. During the first few days, a short properly constructed sentence was occasionally heard in spontaneous as well as in reactive speech, but even these soon ceased, only such expressions as noted above remained.

During the early part of her hospital residence she executed command movements sometimes well, sometimes poorly, and in general the simpler movements much better than the more complex, but it was not long before such reactions also failed. Still she was so very restless, continually leaving her bed, that it was necessary to care for her in the continuous bath. She often sat half-upright calling out rather quickly, for hours at a time, "ti, ti, ti, ti,"meanwhile clapping her hands. If she were asked questions she took not the slightest notice. She displayed just a little interest in her relatives, whom she apparently did not recognize. On the other hand she now and then addressed the nurse as "Grete," the name of her daughter.

From the very beginning and throughout her stay at Endegeest she had to be fed by the nurse, and she was always untidy. During the three years in hospital there were several epileptiform attacks (four in all) which differed from ordinary epileptic seizures by long after-periods of unconsciousness, periods lasting an hour.

Now if I mention that the pupils reacted; that definite focal symptoms—aside from apractic, aphasic and asymbolic indications—were absent; that the reflexes were normal; that the heart

was not enlarged; that the urine was free from albumin; and that there were no evidences of peripheral arteriosclerosis; then I have outlined the chief features of the disease-picture which this woman presented. I must add only that, following an epileptiform attack, a transitory right facial paresis was observed.

In the early part of 1910 slight contractures of the lower extremities developed. Once, after a long period in the continuous bath, slight muscular twitchings were observed which while more pronounced on the right side of the body were also noted on the left side.

March, 1910, the following note was made: "The attention of the patient is difficult to gain; even when food is offered she makes no effort to take it, nor opens the mouth when the spoon is brought near. Of her own accord she frequently appears to follow objects with her eyes, but it is almost impossible for anyone to arouse her attention. If she is asked, while eating, "Do you wish more?" or "Does it taste good?" an occasional "yes" is heard. This "yes" is the only intelligible word uttered during a period of three hours, and should it be interpreted as an actual reaction, then, it is the only mental contact made. It is also striking how less frequently the remarkable expressions (ti, ti, ti, ti, or puk, puk, puk) are heard which earlier were so loudly and repeatedly emitted. The last few months she has emaciated markedly."

In May, 1910, she died suddenly and unexpectedly, while the nurse was fixing the food preparatory to feeding her.

As supplementary the following is added: Lumbar puncture was negative, likewise a Wassermann reaction of the blood. Examination of the eyegrounds revealed nothing abnormal.

The autopsy on this case revealed a markedly atrophic cerebrum, the atrophy diffuse in character. Focal lesions were found nowhere. The sulci gaped and the convolutions were small. Here and there a slight clouding of the meninges was observed. The larger vessels exhibited no signs of arteriosclerosis. The brain weighed 900 grams. The cord was not preserved.

Microscopically, plaques were present in great number and widely distributed in the cerebral cortex, in greatest number in the temporal gyri, while stratigraphically most numerous in the second and third lamiæ. Plaques were not demonstrated in the cerebellum and basal ganglia. Numerous corpora amylacea were distributed throughout the cerebral cortex. Alzheimer degeneration of ganglion cells was present. In the cortical vascular apparatus occasional arteriosclerotic changes were observed, including calcareous alterations of the vessel wall. An occasional lymph and plasma cell infiltration was noted.

Janssens believes his case is an example of Alzheimer's disease, a form of senile psychosis which must be reckoned as an atypical senile dementia.

SUMMARY

Briefly, the clinical histories of these cases may be summarized thus: About middle life or slightly past, with one exception in early adult life beginning at the age of 32, memory defect, disturbance of retention and general mental weakness set in and progress to a marked dementia. The progress of the dementia in some of the cases has been slow, in others fairly rapid. As a rule, early in the course of the affection aphasic disturbances—verbal amnesia, occasional paraphasia and jargon, impairment of ability to comprehend spoken language, graphic disturbances, verbal and literal perseveration—ideational apraxias and agnosias develop, varying from time to time in severity but never as intense or consistent as the speech disturbances and apraxias originating from coarse focal lesions of the brain. Mental confusion, with some delirium, lack of bladder and rectal control without evidence of limb paralyses, good preservation of gross muscular strength, considerable motor activity and restlessness have been striking features of the majority of the cases. Auditory and visual hallucinations with apprehensive delusions based upon them and spatial as well as temporal disorientation have been prominent in some instances. Disturbances of the motor projection paths were slight or absent; if occurring at all usually appeared late, even then were often transitory. In a few of the cases motor disturbances have been noted as residua of epileptiform convulsions. Convulsions with loss of consciousness, however, have not been observed, save in the terminal stage, epileptiform attacks and muscular twitchings being recorded. With exception of Case II, luetic infection does not appear in the anamneses. Alcoholic indulgence while noted as moderate in VII and X, pronounced in II, IX an XI, absent in XII and not stated for the remaining cases, seems to have played no rôle or at most a minor one. An apathetic dementia was recorded for two of the cases (VIII and XII) and skin alterations suggestive of myxedema in two cases (V and XII).

Gross Brain Anatomy.—Atrophy was noted macroscopically as follows: general in I, XII and XIII, general with regional emphasis in II (frontal and temporal), V (occipital lobes), IX right Ammon's horn), XI (frontal and parietal), regional in VII (frontal, parietal, temporal), VIII (frontal), X (frontal, left temporal) and not mentioned for the remaining cases. A quite appreciable cerebral arteriosclerosis, particularly of the larger ves-

sels of the base and their chief branches, was found in I* and X. Slight arteriosclerotic change of these vessels in VII, moderate in XI, and it was especially noted that such change was wanting in II, III, IV, V, VI, VIII, IX and XIII. No note was made in XII. Gross focal lesions were not present in any of the cases save II, in which an old cyst of the corpus callosum, a myelitic softening with atrophy of left pyramidal and posterior columns in cervical cord and a meningo-myelitic focus of the lumbar region were encountered. There was hyperplasia of the pia in I, II, III, IV, V, VII, IX, X and XII, a slight thickening in frontal regions of VIII and not mentioned for VI and XI.

Microscopical Findings.—The microscopical examinations of the brains revealed a large number of miliary plaques in all of the cases save XII. The plaques were more numerous and frequently of greater size than those usually found in other brains exhibiting these structures. In case VII they were of enormous proportions, a single plaque extending in many instances through one or more cortical laminæ. In XII no plaques were found. The peculiar basket-like alterations due to the presence of thick, darkly staining intracellular fibrils arranged in whorls or in a tangled mass, have been found in all of the cases with exception of VII. Formerly these neurofibril alterations in combination with plaques were considered of great diagnostic significance for the mental disorder under consideration, but the combination has been reported by several observers [Fischer (12), Barrett (5), Simchowicz (13), Fuller (9)] as present in brains of some typical senile dements. The writer has also seen basket-cells in combination with plaques in the case of a man of 80 dying without psychosis. Bielschowsky has suggested that the coarse fibrils one sees in cells so affected are perhaps the result, in part, of incrustations of neurofibrils with deposited products of pathological metabolism. He also points out that the course of these fibrils is not always that of the usual course of the normal neurofibrils and is inclined to consider them as entirely foreign elements. Alzheimer conceives a degeneration and chemical alteration of the intracellular neurofibrils which permit them to be stained by other methods which do not usually display these elements. Fischer (12), who reports 19 cases showing such cells, interprets these peculiar cell changes as coarse-fibered proliferations of neurofibrils. He does not consider his cases as examples

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*In Alzheimer's abstract of Case I, as originally published, the larger cerebral arteries are reported as sclerotic. ("Die grosseren Hirngefässe sind arteriosklerotisch verändert." L. c., p. 147, 1906.) In Perusini's report of the same case the larger vessels are stated to be without arteriosclerotic changes. (Die grossen Hirngefässe, der Circulus arteriosu Willisi, die A. A. Sylvii usw. bieten keine-Zeichen einer deutlichen Arteriosklerose dar: keine erheblichen regressiven Veranderungen der Gefässwand," L. c., p. 301, 1909.)

of Alzheimer's disease, but places them in a group which he designates as presbyophrenic dementia. In addition to the changes already noted complete destruction and disappearance of gangloin cells have been reported, Nissl's chronic nerve cell changes and a rich lipoid content of ganglion and glia cells. Progressive and regressive alterations of the glia are rather generally reported, and likewise progressive-regressive phenomena of the cortical vessels; in IX, marked calcification of smaller vessels in Ammon's horn, and occasional calcareous changes in the cortex of XIII. Infiltrative phenomena have failed in all cases except II, in which there was a moderate infiltration of lymphocytes in cortical vessels and pia, endothelial proliferation suggestive of luetic endarteritis and occasional lymphocytes and plasma cell infiltration in XIII.

From all that has preceded, it is reasonable to assume that the type of cases which have been discussed, while not in every instance free from sclerotic vascular alterations of the brain, is not a type of mental disease resulting from arteriosclerosis. In a certain sense a precocious senium is conceivable, but by this something quite different from an early arteriosclerosis is meant. In an earlier paper I have argued that arteriosclerosis *per se* had little or no causative relationship to the formation of miliary plaques of the brain so characteristic in the miscroscopical findings of the type of case here considered and in many cases of typical senile dementia, although many brains of the latter class showing plaques also exhibit considerable arteriosclerosis. On the other hand, plaques may be wanting in brains exhibiting the maximum of arteriosclerosis, particularly in cases recognized clinically as arteriosclerotic insanity and post-apopletic dementia. In all cases of Alzheimer's disease reported, with one exception (XII), plaques have been found in great number, but only two of the cases have shown macroscopically any appreciable arteriosclerosis.

NOTE.

Since this paper was completed, November, 1911, Ziveri has published an additional case (Su di un caso annoverabile nella cosidetta "malattia di Alzheimer." *Rivista di Patologia nervosa e mentale, Anno XVII, fasc. 3, pp. 137-148,)* which though occurring in a subject of 65, presented the characteristic clinical symptoms and anatomical findings which have been described in the preceding cases.

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EXPLANATION OF PLATES.

Fig. 1.—Right prefrontal cortex showing a rich deposit of miliary plaques.

Fig. 2.—Left Ammon's horn. More than a hundred plaques may be counted.

Fig. 3.—Island in plexiform layer of left gyrus hippocampi. All ganglion cells showing Alzheimer degeneration.

Fig. 4.—Typical plaque, oil immersion lens. Alzheimer degeneration also shown.

Fig. 5.—Beginning glia encapsulation of plaque.

Fig. 6.—Glia fibres penetrating plaque.

Figs. 1, 2, 3. 4 are from sections prepared after the Bielschowsky silver impregnation method, figures 5 and 6, Weigert's method for neuroglia.

Fig. 2

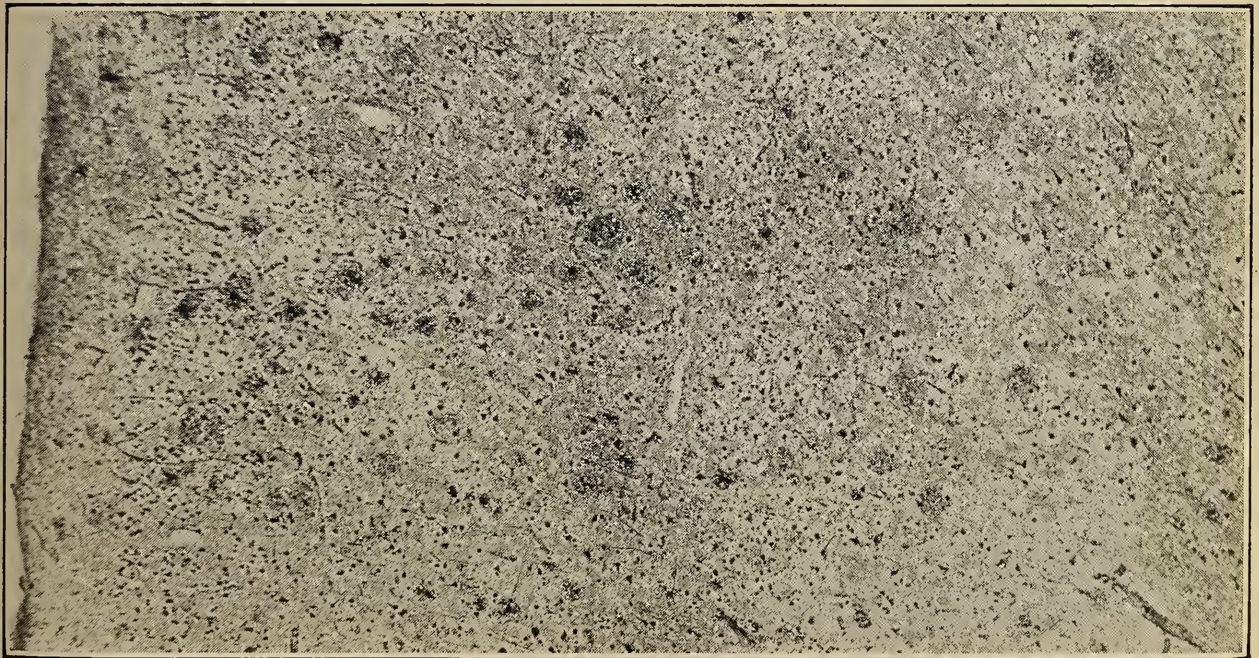

Fig. 1

Fig. 4

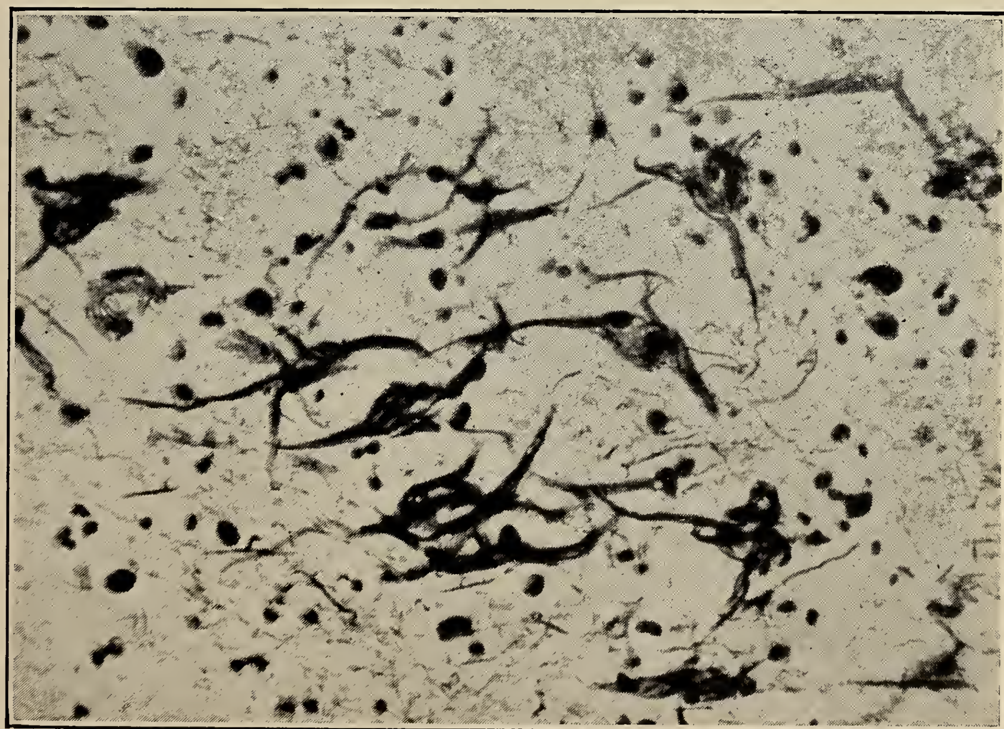

Fig. 3

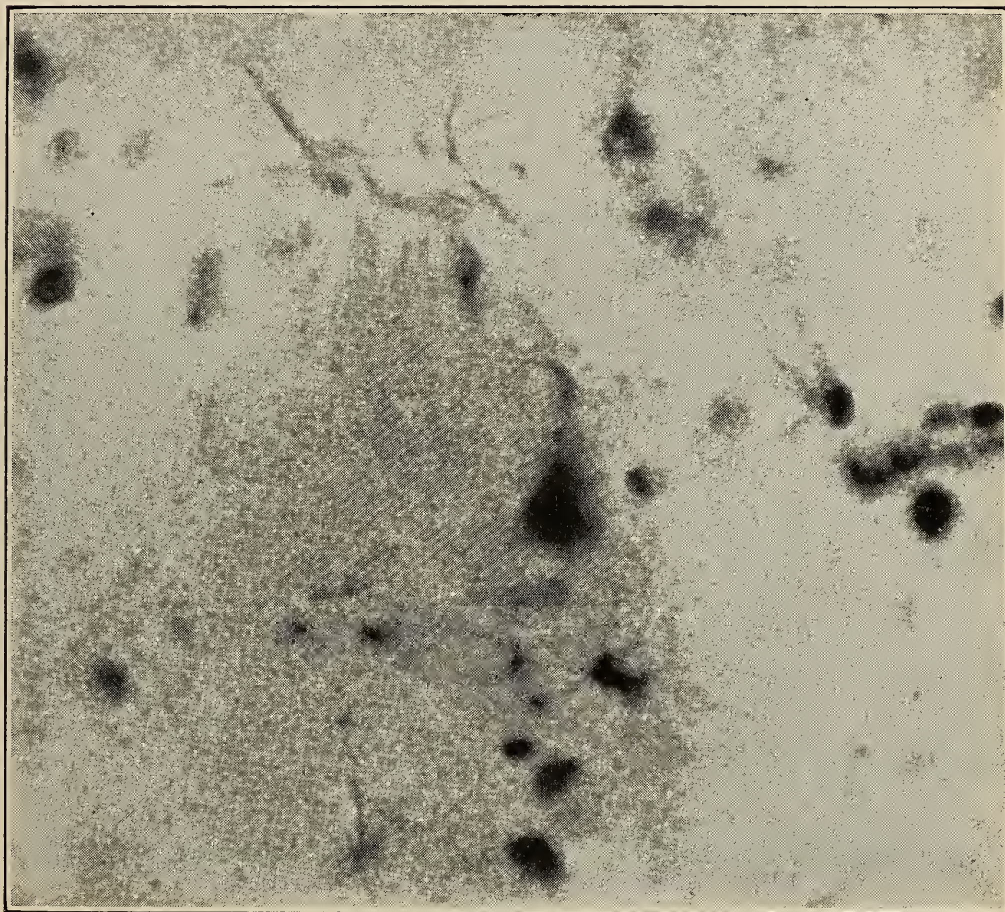

Fig. 5

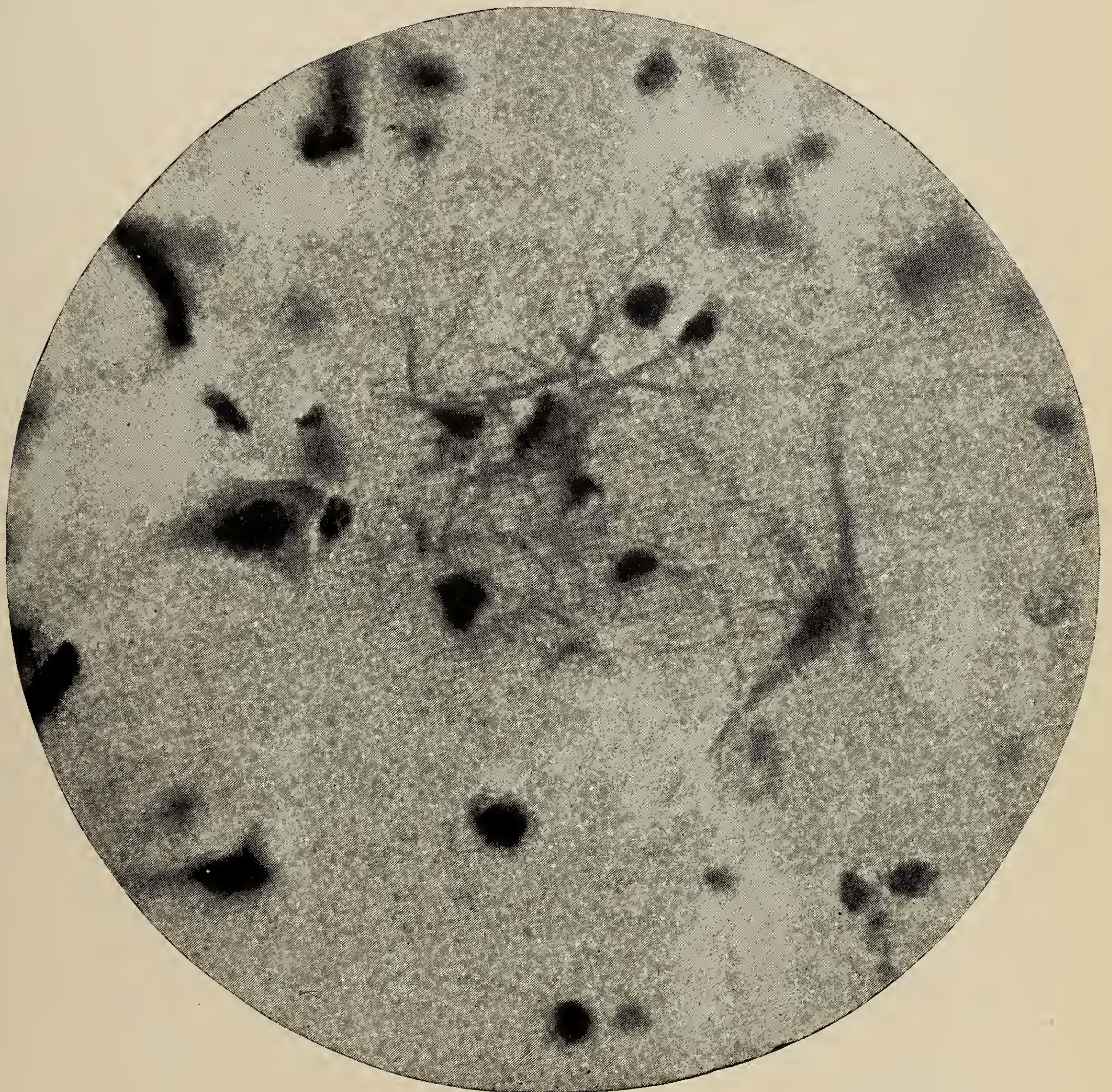

Fig. 6

XIV

FURTHER OBSERVATIONS ON ALZHEIMER'S DISEASE.*

By Solomon C. Fuller, M.D., and Henry I. Klopp, M.D.

One of us has recently described what we believe to be the tenth recorded case of so-called Alzheimer's disease,[1] that is, certain histopathological alterations of the brain indicative of senile involution associated with clinical symptoms such as are exhibited in the severest form of senile dementia, but appearing in comparatively young persons. Included among the clinical symptoms are phenomena suggestive of coarse focal lesions of the brain—aphasic and apractic disturbances—which have not been accounted for by coarse focal lesions at autopsy.

For purposes of comparison there were added to the report of the first Westborough case the clinical histories of all cases then known to us, ten from foreign literature and two from American sources, together with a critical analysis of these histories and their associated anatomical findings. It was shown that despite certain basic chracteristics, more or less present in all of the cases, essential differences existed which precluded for the present any dogmatic statement as to the exact clinical grouping of these cases, as well as any claim for a definite gross or histo-pathological anatomy. Nevertheless, in so far as one may be justified in correlating anatomical changes with clinical symptoms, there is much in the finer anatomy as a whole to indicate a psychosis dependent in a great degree upon involutional changes in the brain and blood vascular apparatus, while the clinical histories offer many features which we are accustomed to associate with senile mental disorders.

The first case of Alzheimer's disease to be recognized as such at Westborough was clinically and anatomically quite comparable to the first case reported by Alzheimer[2] and the group of cases later collected and published by Perusini.[3] The case which forms the subject of this communication did not exhibit anatomically the peculiar type of intracellular neurofibril alteration common to the majority of reported cases, and in this respect is like Alzheimer's second case,[4] the only other to our knowledge in which the basket-like appearance of many ganglion cells was wanting. So-called senile plaques, while present, were neither large nor numerous, and differed slightly in structure from plaques as usually described, but

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exhibited among themselves a great degree of uniformity. Moreover, the mode of onset and much of the clinical course suggest that certain exogenous toxic factors, which as a rule we do not link with the exciting or even the predisposing causes of senile psychoses are, perhaps, more frequently operative than has been supposed.

Before going on to the history of this case we quote from the paper referred to above[2] a brief summary of the leading clinical features of all of the cases as revealed by the literature: "About middle life or slightly past, with one exception where the onset was in early adult life, memory defect, disturbance of retention and general mental weakening set in and progress to a marked dementia, in some of the cases slowly, in others rapidly. Early in the course of the affection aphasic disturbances—verbal amnesia, occasional paraphasia and jargon, impairment of ability to comprehend spoken language, graphic disturbances, verbal and literal preservation—ideational apraxias and agnosia develop, varying from time to time in severity but never as intense or consistent as the speech disturbances and apraxias originating from coarse focal lesions of the brain. Mental confusion with some delirium, lack of bladder and rectal control* without evidence of limb paralyses, good preservation of gross muscular strength, considerable motor activity and general restlessness have been striking features of the majority of the cases. Auditory and visual hallucinations with apprehensive delusions based upon them and spatial as well as temporal disorientation have been, in instances, likewise characteristic. Disturbances of the motor projection paths were slight or absent; if occurring at all usually appeared late, even then were often transitory. In a few instances motor disturbances have been noted as residua of epileptiform convulsions. Convulsions with loss of consciousness, with one exception,† have not been observed in the terminal stage, epileptiform attacks and muscular twitchings being recorded. With exception of Case II, luetic infection does not appear in the anamneses. Alcoholic indulgence while mentioned as moderate in Cases VI and VIII and pronounced in II and VII seems to have played no role, or, at most, a minor one."

So far as we are aware, these still remain the salient clinical features of this type of cases. The original anatomical picture, on the other hand, has undergone considerable modification, although preserving the close kinship with the histo-pathological alterations of senile cerebral involution. The anatomical changes of this

*Not necessarily the result of paralyses, but rather the untidiness that is commonly associated with confused states and marked dementia.

†The case here reported is also an exception.

atypical senile group together with what may reasonably serve as a criterion for a senile psychosis will be discussed more in detail in the further course of this paper.

The history of the second case of Alzheimer's disease to come to autopsy at Westborough State Hospital is as follows:

No. 9879, a woman of fifty-six years was admitted to Westborough State Hospital December 10, 1911, on a transfer from the Arlington Health Resort, a private institution for nervous and mental diseases, where she had been a patient since August 8, 1911.

It is reported that throughout life the patient had been of the so-called nervous temperament—quick and sensitive—but until the present illness had usually exercised good self-control. In 1883, while descending a flight of stone stairs she fell, striking the coccyx and has had soreness in that region ever since. Some twenty-five years ago she received rather painful injuries in an accident, she was thrown from a moving carriage, sustaining extensive lacerations about the head, one of which nearly severed an ear, and was dragged for a considerable distance over the granite paved blocks of the street. She was unconscious for twenty-seven days after the accident, but no history of paralysis, speech disturbance or amnesias following the occurrence was elicited. During several years thereafter she suffered severe periodical headaches at intervals of about three months, the attacks lasting on an average of three days and each leaving her quite exhausted physically. In about three days after the cessation of the cephallagia she would regain her usual health. These periodical headaches, however, had long since ceased. In 1909 she had an attack of broncho-pneumonia, said to have been of short duration and from which she made a good recovery, her general health, save for habitual constipation, remaining good until the onset of the present illness, in May, 1911. At that time a particularly malignant streptococcic tonsilitis was prevalent in Boston and its vicinity, a form of tonsilitis which often proved fatal to infected persons over fifty. A son-in-law, in whose household the patient lived, and his wife (her daughter) contracted the infection, and our patient undertook their nursing, the care of a young grandchild and the management of the household. After a short while she, too, developed a sore throat which, it appears, was of a milder type. At any rate for the reason of her many responsibilities, her friends state, she did not "give in to it," continuing to care for the sick members of the family and ordering the household affairs.

June 23, 1911, the son-in-law died as the result of the malignant tonsilitis. Almost immediately thereafter the patient developed an articular rheumatism affecting the legs, arms and hands. Even then she did not take to bed, for she was very busy with preparations for changing the residence of the family, most of the work devolving upon her since the daughter, though recuperating, was still not strong. The arthritis persisted for about a month.

August 1, 1911, she was free from pains in the joints, but was in very poor physical condition and was extremely nervous. For several weeks there had been a progressive asthenia, rapid emaciation and marked insomnia. For about a month, although retiring at a late hour, she could not sleep after 3 A.M., when, because of the restlessness engendered by the loss of sleep, she would get up and begin the day's work at that hour. Meanwhile, in addition to rather vague and general apprehensions, she was particularly apprehensive as to the future of her daughter and grandchild, now that their bread-winner and natural protector was gone, an apprehension far in excess of the normal. Always possessing a fear of hospitals of any nature whatever, this feeling became accentuated. From her impaired physical condition she concluded that a serious illness was imminent. There was also a sense of impending death, for she frequently gave directions to her daughter for the disposition of her belongings in case anything happened to her.

August 3, 1911, certain disorders of speech were noted, described by friends as "peculiar." On questioning the relatives it was learned that

these speech disturbances resolved themselves into irrelevancy, desultoriness, hesitancy, as though groping for the proper words, and occasional paraphasia, whereas formerly, a woman of good education, she was a ready talker and possessed the faculty of expressing her thoughts clearly and to the point. Short periods of confusion were also reported in which she did not seem to know what she was about. Memory, too, was rapidly becoming impaired, and with all of it there was some depression and self-accusation. She frequently remarked after the death of her son-in-law, "I did not do enough for him. He might have lived had I given him better care," etc. She complained of noises in the head which were described as "like a great rush of water" and was frequently agitated over trifles. During the three days prior to being sent away visual and auditory hallucinations developed along with apprehensive delusions based upon them. She would hide beneath the bed clothing; cry out in terror, that "they" would put her to "the living death," burn her up, etc. She also spoke of hearing "voices from a throng of people," of seeing frightful animals on the bed and walls of the room, and begged not to be left alone. During this excited period she was disoriented for time and place, but recognized the members of her family.

August 7, 1911, she was sent to Dr. Ring's Sanatorium, Arlington, where she arrived in a condition of stupor. An hour later she was aroused with difficulty, did not know how long she had been there or where she was. When questioned she replied only with a repetition of the question. During the night she became more lucid, but was still disoriented; kept her head beneath the bed clothing, was apprehensive and extremely noisy. She was also actively hallucinated, in the manner as described above. In consequence of her disturbed condition she was removed to the Arlington Health Resort. On arrival at that institution she was still hallucinated and appeared suspicious of her surroundings. She did not sleep during the first night, although she was fairly quiet. The following day she had three epileptiform seizures which the physician at that institution was inclined to consider of an hysterical nature. No paralytic phenomena ensued. During the next day alternating periods of confuson and periods of a fair degree of mental clearness are reported, but at night she was very restless and talked a great deal in an incoherent manner.

August 10, 1911. Increased apprehension, especially intensified when left alone; active auditory hallucinations which seemed to form the basis of delusions that men were coming to shoot her. She was very noisy and exhibited considerable motor reproduction.

Gradually, in about three weeks, the apprehension and hallucinations diminished, finally disappearing. She developed considerable insight, slept well, enjoyed the visits of relatives, was out of doors most of the day and looked forward to returning home a well person. This improvement, however, was of short duration—less than a week.

One morning she seemed slightly depressed and refused food. During the day she gave evidence of hallucinations, saying that she heard two men in the field talking of killing her, adding spiritedly that she would not be "shot down like a dog." The old fears and apprehensions returned, but she was not as noisy as formerly. She would hide or remain perfectly quiet, and frequently begged to be protected from the torture that was coming to her. She distrusted everyone, including her family, and developed certain ideas of negation, as for example, she had "no husband," "no daughter," "no nothing," etc. She not only refused to recognize her husband and daughter when they visited her, but handled them roughly when they made advances. When they were about to leave her she always wished them to stay longer, even though a few moments before she had said they were nothing to her.

This condition, our informant, Dr. A. H. Ring, states, persisted until the patient left Arlington Health Resort, with addition of increased depression, agitation, refusal of food and some retardation.

When admitted to Westborough State Hospital she was in rather poorly nourished physical condition, and appeared considerably older than her

stated age (57), gait rather unsteady, but no indication of paralyses of lower extremities. The heart's action was rapid, but regular; no murmurs; prominent and firm temporal and radial arteries; blood pressure (Tycos instrument) 145. Respiratory sounds not pathological; urinalysis revealed a diffused nephritis; other abdominal viscera negative. There was a perineorraphy scar, the uterus small and fixed by adhesions. The skin was sallow, presenting numerous moles, scars on the head, and right arm, and the right ear badly mutilated as the result of the old injury.

The pupils reacted promptly to light, she did not coöperate in accommodation tests. Hearing in right ear greatly impaired, almost nil; aprently good in left. Integrity or extent of impairment of smell, taste and tactile sensibility could not be definitely determined for lack of coöperation, but she reacted rather promptly to painful stimuli. There was a rather general coarse tremor, particularly marked in the tongue and fingers. Elbow and wrist reflexes elicited, right K.J. plus, could not elicit left. No clonus; no Babinski; no cranial nerve palsies or any other paralyses; some swaying to Romberg.

The patient was very restless and markedly apprehensive. She did not seem to understand many of the questions asked her, repeating them over and over as though to grasp their meaning, or in a parrot-like manner. Occasionally she gave a prompt and pertinent reply to a question, but usually she employed indiscriminately the following phrases: "Sometimes, I do, sometime I don't," "I don't know," or "that depends." At one time in the course of the interview she said, with an air of great significance, "I comprehend lots of things I don't pretend to know." There was little play of the emotions in her facial expression, except that of terror, and on the whole she imparted the impression of considerable mental dulling.

Orientation was very imperfect. Although at the time of the interview she had been but a few hours in the hospital she could not tell how long here, where she had come from, the day of the week or month. She could not give the commonest historical or geographical facts, nor tell how many children she had. Retention was also very poor. She recognized objects shown her and had no difficulty in imitating simple movements. She was entirely without insight into her own condition.

For the two weeks following admission she slept poorly, ate but little and cried much of the time. There were periods when she was very noisy, during which she frequently left the bed to wander aimlessly about the ward. The apparent difficulty in comprehending what was said to her still persisted. She always repeated the questions and seldom added a pertinent reply. Spontaneous speech, however, was frequent, although for the most part incoherent and in which there was frequent mention of Arlington and of persons using her mind. She not only acted in a confused manner, but once or twice nodded assent to the question, "Are you con fused?" Although frequently confused she had not up to this time soiled the bed or her person with feces or urine.*

In the early part of February, about six weeks after admission, she was worse. Although kept in bed she was constantly restless, disarranging the bed clothing, or moving her limbs about in aimless manner. She would take but little food and strenuously resisted tube feeding. She was also very resistive to all attempts to do anything with her, the basis of which seemed a fear of all about her. She was even suspicious of the food. She no longer made any attempt to answer questions or to comply with requests, and frequently appeared confused. The content of spontaneous speech was becoming more and more jargonic in character. A Nogouchi test for syphilis was negative.

February 20, 1911, she was noticeably weaker. The heart's action was rapid and irregular and examination of the chest revealed a pleuritis and a developing right lobar pneumonia. She appeared very confused, babbled almost constantly in an unintelligible jargon, and was very restless. The only time during a period of several days when she said anything which was intelligible was when the clergyman visited her, she said to him "Get

* This was probably due to the excellent care of a very efficient nurse.

out." During the next three days the pneumonic process extended, and now for the first time in hospital she passed urine and feces involuntarily. The stools were diarrhœic and there was almost constant dribbling of urine. There was swelling and redness of the knee joints and beginning decubitus. The tongue was dry and covered with sordes and she lay abed with mouth wide open, breathing laboredly.

February 24, 1911, death with symptoms of lobar pneumonia and cystitis. Autopsy 14 hours, post mortem.

Anatomical Diagnosis.—Congestion of dura, hernia of Pacchionian granulations through dura, congestion, edema and regional proliferative leptomeningitis chronica, diffuse atrophy of cerebral gyri, small patch of atheroma in basilar artery, otherwise no macroscopic evidence of cerebral arteriosclerosis; brown atrophy of heart, atheromatous degeneration of endothelium of ascending aorta; acute exudative pleuritis, right lobar pneumonia; hepatic congestion; chronic interstitial nephritis; gastritis, acute enteritis; diffused nephritis, acute cystitis.

The brain weighed 1127g., left cerebral hemisphere 497g., right hemisphere 482g., cerebellum, pons and medulla 156g. The skull capacity as estimated by the method of Rosanoff and Wisemann was 1270cc. The first temporal, transverse temporal and supramarginal gyri of the right side were smaller than the corresponding gyri of the left side. The rather diffused atrophy of the cerebrum is slightly more marked on the right side. The pial thickening and opacity is confined almost exclusively to the frontal and upper two thirds of the parietal convexity. On section of brain no gross focal lesions were found anywhere.

The spinal pia exhibited many small osteomata distributed chiefly in the ventral portion of the thoracic area. The cord was of delicate proportions, slightly congested, otherwise no gross lesions.

Histological Description.—The microscopical examination of the trunk organs is confirmatory of the anatomical diagnosis of the protocal, a detailed description of which does not seem necessary. The histological alterations of the brain we limit to what seem to us the most important features.

The cortical histological alterations are essentially those which characterize a severe form of senile dementia, ganglion cell atrophies—in some instances with superimposed acute changes—rich lipoid deposits in ganglion and glia cells, fine-fibered glia proliferations and cellular gliosis, progressive-regressive changes in the vascular apparatus, so-called senile plaques, and the like. In addition to these changes, particularly in left occipital convexity, are certain small areas suggestive of the areas found in senile cortical devastation. The parts so affected are frequently of irregular outline and commonly found at the bottom of sulci, although also seen in the lateral and summit portions of gyri. These areas are not always coextant with the triangular or wedge-shaped areas of cortical vascularization, but always within and surrounding them are large glia cells. (Fig. 3) There is not, however, any special fibrillary gliosis. Indeed, by the special glia methods glia fibres are scant within these foci, the whole picture by practically all methods employed imparts the impression of a comparatively recent process. The large pale cells seen in the devastated area (Fig. 3) are glia cells.

In contradistinction to the comparative absence of macroscopic evidence of cerebral arteriosclerosis in the larger vessels of the brain, the microscopic examination reveals alterations in the smaller vessels of the cortex and marrow, which are usually interpreted as arteriosclerotic changes, such as proliferative changes in endothelium, splitting of the elastica, regressive alterations of proliferated elements, a few instances of hyaline alteration of the vessel wall, the arteriofibrosis of Friedman[5] which Simchowicz[6] and one of us[7], separately, have illustrated in recent publications, vessel budding and so-called packet (*Pakete*) formations. The calcareous degeneration of small vessels which Lafora[8] and Jansen[9] report as present in their cases we did not find in this case.

The Alzheimer degeneration of intracellular neurofibrils (basket-like ganglion cells in neurofibrils preparations) was not exhibited by a single ganglion cell. Numerous areas of the cortex, basal ganglia, pons, medulla, cerebellum and spinal cord were examined, more than 300 sections prepared after the Bielschowsky, Levaditi silver impregnation for *trepinoma pallidum** and the Mann methods being employed. In this respect, then, the case is like Alzheimer's second reported case[4], but there the likeness ceases, in so far as the chief characteristics of neurofibril preparations of this group of cases (plaques and basket cells) are concerned, but like all other cases in the main histopathological alterations.

Senile plaques though present were neither large nor numerous in any of the regions examined, not even in the prefrontal areas and hippocampal gyri (Fig. 1) where generally these structures are the most numerous and the largest, although in the right hippocampal gyrus, T1 right, particularly in the portion of the latter forming a part of Campbell's auditosensory area[10], they were more frequently encountered. Next to these areas, the prefrontal regions of both sides and the right supramarginal furnished the greater number. No plaques were found in the central gyri, basal ganglia, pons, medulla, spinal cord and cerebellum. In the cerebellum, however, particularly in the sections prepared after the Levaditi method, many amyloid bodies with fibrillary proliferations about the periphery were shown. A similiar condition was also reported for the first Westborough case of Alzheimer's disease[1].†

Although one of us has elsewhere shown[7] that the distribution of plaques is generally diffuse in character, with accentuation where general histological alterations are greatest, it is not clear to our minds why the cerebellum and spinal cord should exhibit a comparative immunity. We have instances on record at Westborough of plaques in medulla, but none in the cord, even in those cases which showed them in the medulla. A feature of the plaques in this case to which we would call attention is the absence of the large centrally located nuclear-like body. Instead there is a collection of smaller homogeneous masses, imbedded, as it were, in a matrix of rather thick fibrils, some straight, others curled, the whole suggesting a conglomerate. (Fig. 2.) The exceptions are the very small plaques which Fischer[11] designates as *Morgensternchen.* Indeed, the larger plaques not infrequently seemed to have resulted from a number of these little star-like structures arising simultaneously within a small areua.

All the plaques encountered in this case we consider as young varieties, in so far as one is justified in determining this from the character of the glial reactions in their vicinity. The fibril components of these plaques we judge to be chiefly neurofibril proliferations. In glia preparation we were unable to demonstrate glia fibrils within the plaques, but of course we recognize that that in itself would not exclude their existence in Weigert preparations. The Mann sections were also negative for a fibrillary gliosis.

The rather peculiar reaction in Herxheimer's scarlet stained sections—fine red stippling of the entire plaque—which Alzheimer described in his second case and which was also found in the first Westborough case we did not demonstrate in the present case.

The above are the essential clinical and anatomical data of this case.

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*We have found this method useful for the demonstration of plaques and can confirm A. Hauptmann's statement, *Zeitschr. f. d. ges. Neurol. u. Psych., Bd. 9, S. 239, 1912,* that more plaques are exhibited by this method than by the Bielschowsky method, and is to be recommended where plaques are scantily shown by other methods. For finer plaque details, however, we prefer the Bielschowsky method and Mann's eosin-methyleneblue staining as recommended by Alzheimer.

†It may be well in this connection to call attention to recently published views of Alzheimer and of Bielschowsky concerning amyloid bodies. These observers point out the similarity of chemical make-up and the probability of a common origin from degenerating nervous elements. At any rate, one seems justified in deducing from their statement that they argue a similarity if not a like origin for plaques and amyloid bodies, structures so common in brains undergoing senile involution.

Now how shall we group the case here reported and the other reported cases of so-called Alzheimer's disease; is all the data sufficient to warrant a new clinical group, or is it better to interpret them as representative of a phase of senile dementia, a precocious senile dementia, or, if you will, an atypical senile dementia? At all events, if we take the ground that these cases fit best into the senile dementia group, it will be conceded that they are not of the sort commonly designated as "simple senile dementia," for their clinical histories and anatomical findings best comport with the severer forms of senile dementia. If, then, these are cases of atypical senile dementia, the question could fittingly arise why a special clinical designation—Alzheimer's disease—since after all, they are but part of a general disorder. Still the profession must remain indebted to Alzheimer for having first called attention to this type of cases. He himself does not claim a distinct clinical entity for the group, for in the discussion of his second reported case[4] he states as his conviction that, since there were many points of contact, to say nothing of similarities, between this group and senile dementia, there was no good ground for supposing a special pathognomonic process; that the cases were representaitve of a senile psychosis—a typical senile dementia—a view which is shared by Bielschowsky,[12] Lafora,[8] Jansens[9] and the writers.

Barrett,[13] in the report of a group of cases among which was included a case of the type under consideration, although not reported as such at the time, considered that plaques in combination with basket-like degenerations of ganglion cells, together with certain focal atrophies of the brain which his cases presented, offered "explanations of a special clinical group of senile psychoses." So that here also we have a case reckoned with the general mental disorders of senium.

Schnitzler's case,[14] at first sight, is disconcerting, for it is difficult to conceive of senile dementia in a person of thirty-two. Nevertheless, Schnitzler groups his case with the type of which Spielmeyer writes as, "cases of senile dementia which differ from the usual type in that a marked dementia rapidly ensues, together with focal symptoms of asymbolic and aphasic character." He also shows an inclination to flirt with the rather fascinating idea of an origin from disordered internal secretions (ductless glands), since his case and one of the cases reported by Perusini[3] exhibited certain myxedematous symptoms.

It is seen that all observers who have reported cases of Alzheimer's disease consider them as belonging to the senile group, although in most instances of precocious onset. We then, it appears, have to deal with an atypical form of senile dementia. But what are we to understand by senility in an anatomical or

psychiatric sense?* Anatomically we are as yet unable to draw a line with any degree of precision between the brains of some so-called normal elderly persons and certain senile dements. Still, while definite anatomical criteria may be lacking, in so far as concerns senile dementia, on the psychical side the lines are perhaps better demarcated. It is recognized that general dulling, memory weakening, disturbances of retention, impairment of judgment, lessened initiative, inability to concentrate the attention on matters formerly of interest and a weakening of the normal affectivity are hall marks, so to speak, of senile mental disorder in general. The lessened interest and the more or less profound disturbances of retention which accompany the dementia of senile insanities serve in a great measure to differentiate them from the inherited or other defect-psychoses. Nowadays one would hesitate to say that "a man is as old as his arteries," for the mental disorders of senium and arteriosclerosis are well defined, although often found in combination. One also hesitates, in spite of the intensive manner in which our knowledge concerning plaques has been recently cultivated, to reduce senile dementia to terms of plaques. The case of Schnitzler, admitting that as an example of an atypical senile psychosis, the two cases of circumscribed senile atrophies of Alzheimer,[4] the case here reported with but few plaques, the recently reported group of Westborough cases which coursed clinically as senile dementia yet anatomically presented no plaques,[7] all give pause.

The case which forms the subject of this paper is in our opinion an example of the group now designated as Alzheimer's disease, although varying somewhat from the first Westborough case and other reported cases. The antecedent ill health and mental stress, the mode of onset with apprehension and depression, periods of mental confusion and active hallucinations, followed by a short period of remission, were such as to suggest several possibilities. Among the possible psychoses considered were the infective-exhaustive group, manic-depressive insanity, Kræpelin's melancholia—now in disrepute in certain high quarters—and arteriosclerotic insanity. Although general paresis or cerebral lues was not seriously considered, a Nogouchi test of the blood was made. This proved negative. Soon, however, the marked disturbance of memory and retention, the aphasic disorders of a sensory character, the periods of confusion, restlessness and motor reproductivity, together with the earlier epileptiform convulsions without motor residuals, aroused the suspicion of a possible case of Alzheimer's disease, which we believe the subsequent course and anatomical findings as a whole justify us in maintaining.

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*Whether senium is a normal or pathological process has been the subject of much discussion, which leaves the problem far from solution.

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EXPLANATION OF PLATES.

Fig. 1.—Hippocampal gyrus rt. Levaditi method for *Trepenoma pallidum* as recommended by Hauptmann for plaques. This photograph shows as rich a field as found anywhere in the numerous sections examined. Bausch & Lomb 2-3 achromat. obj., Zeiss projection oc. No. 2, bellows extension 84 cm.

Fig. 2.—T1 rt. Bielschowsky silver impregnation. Large plaque suggestive of the conglomerate described in text, and several smaller plaques, latter not in good focus. Zeiss 2 mm. apochromat. obj., projection oc. No. 2, bellows extension 90 cm.

Fig. 3.—Left occipital convexity. Area not unlike senile cortical devastation. Toluidin blue, after Nissl. Zeiss AA. achromat. obj., no ocular, bellows extension 1 m. 65 cm.

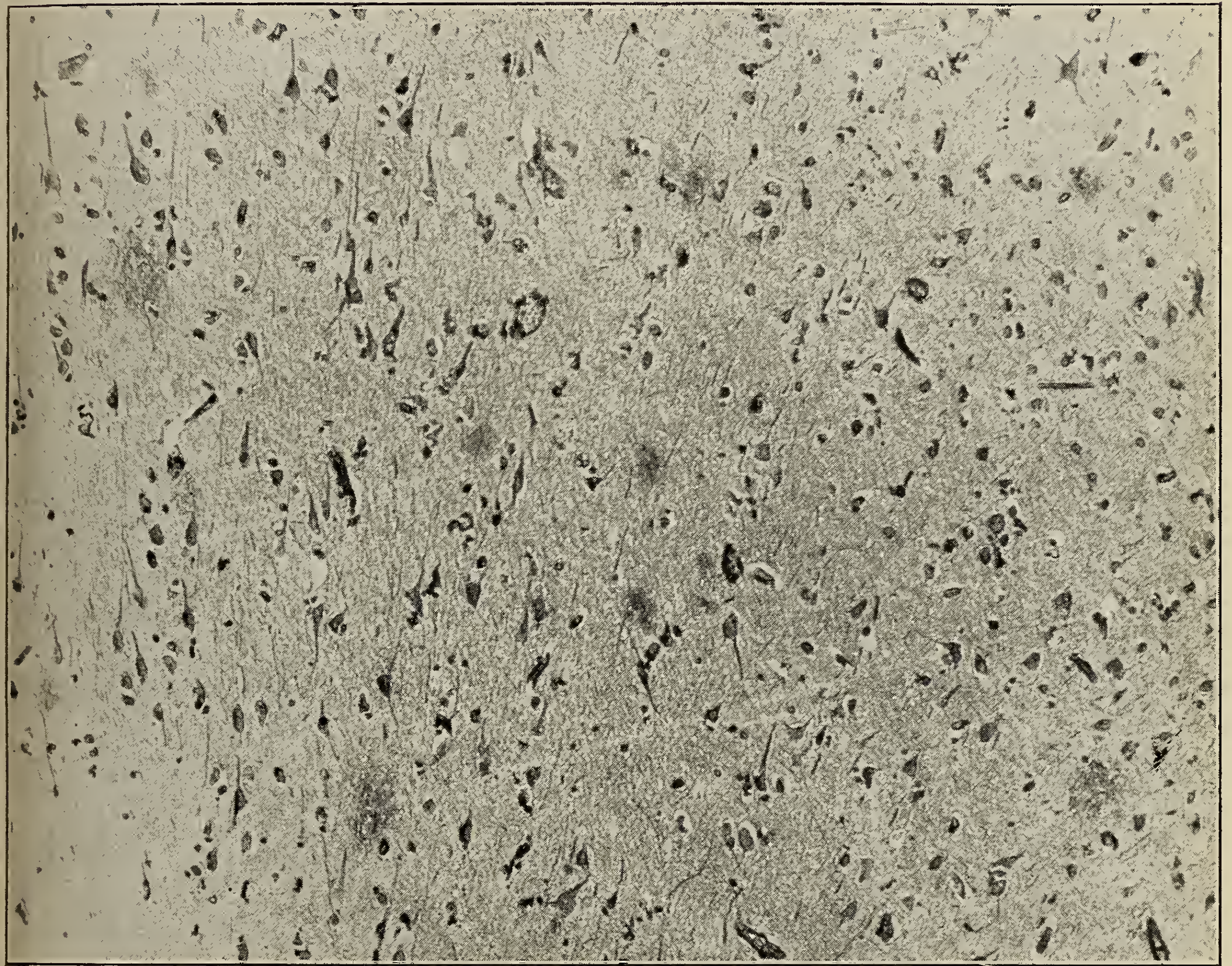

FIG. I.

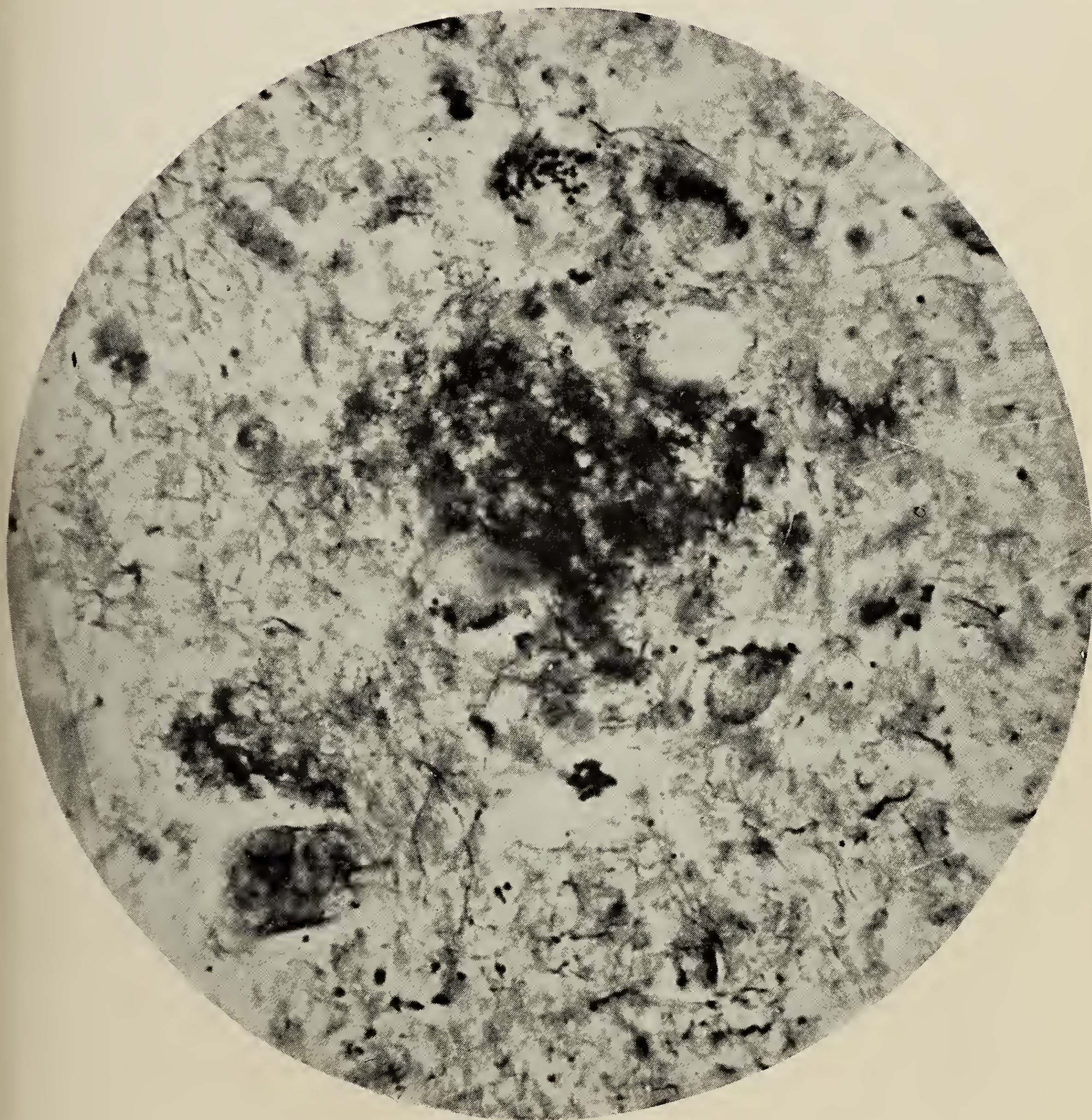

Fig. 2.

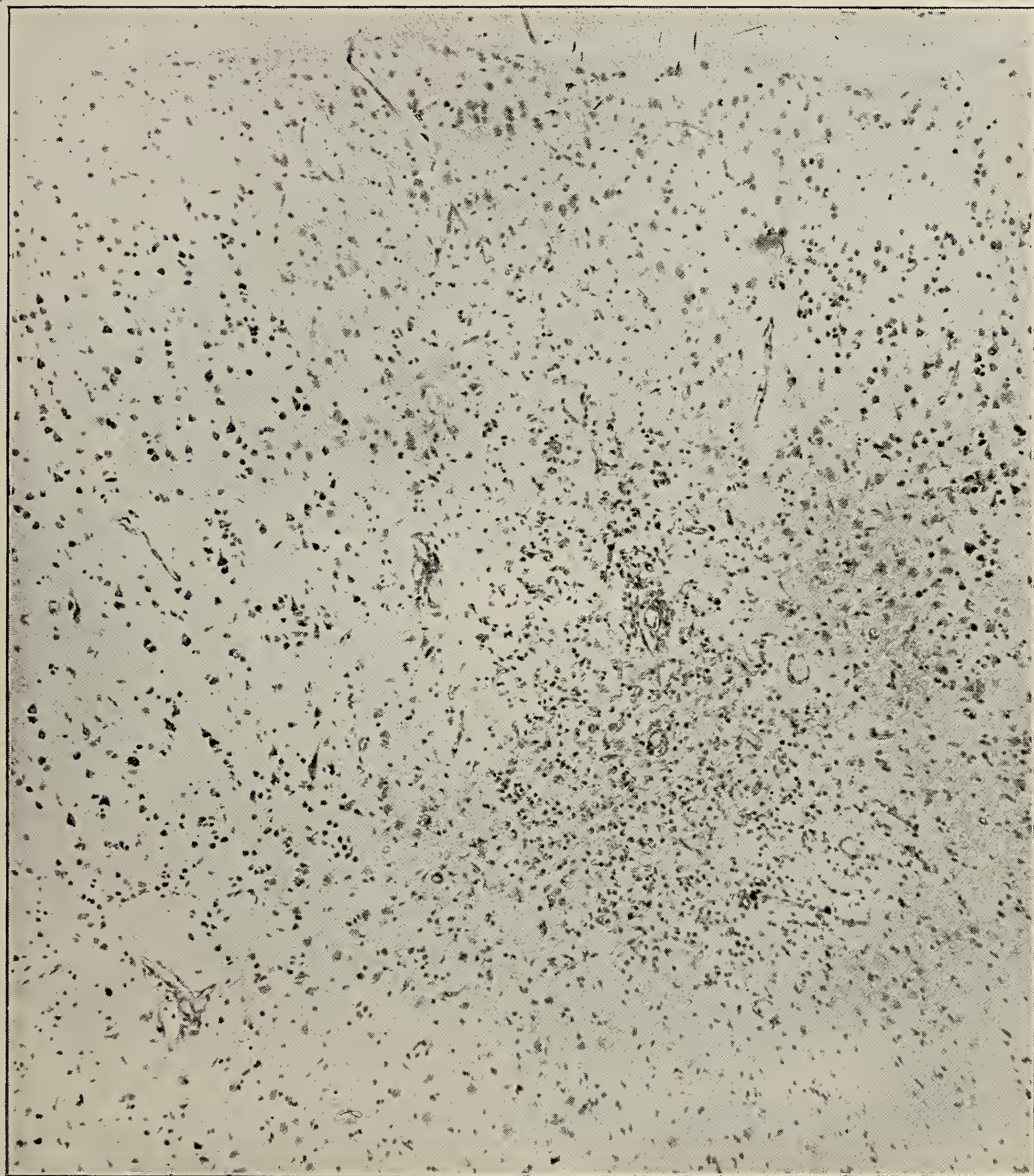

FIG. 3.

XV

A CASE OF HUNTINGDON'S CHOREA

By Solomon C. Fuller, M.D., and John F. Lovell, M.D.

The more recent papers dealing with Huntingdon's chorea, indicate that, quite regularly, one may find degenerative lesions, particularly microscopical alterations, in the cerebral cortex and other portions of the brain, especially in the basal ganglia—caudate and lenticular nuclei, and subthalamic region. While gross anatomical alterations, such as diffuse and regional atrophies, are also reported, these have been assigned less weight, for the reason perhaps, that diffuse and regional atrophies are an accompaniment of many organic brain conditions and mental disorders. The basal ganglia changes have recently assumed considerable significance in the pathological anatomy of chronic progressive chorea. Indeed, by some, these changes are already interpreted as the anatomical substrate of the choreic movements which are so prominent among the characteristic symtoms of the disease. Not only for *chorea major* have the basal ganglia changes been made responsible, or at least looked upon with suspicion as the anatomical factor, in the production of choreic movements, but they have also been made to serve the same purpose for *chorea minor*.

We would not have it understood, however, that on the anatomical side Huntingdon's chorea has been definitely reduced to microscopical alterations focalized in the basal ganglia and subthalamic region, for practically all observers mention the diffuse distribution of degenerative lesions throughout the brain, even though these lesions vary in their intensity in the different portions of this organ. Nevertheless, Jelgersma[1] maintains that, particularly in those cases of Huntingdon's chorea with late onset, the degenerative process begins in the basal ganglia, and in occasional cases is confined solely to this region.

Several observers (Keraval,[2] Raviart,[3] Clarke,[4] Good,[5] Rusk[6]), in their descriptions of the cerebral cortex of subjects dying of Huntingdon's chorea, have called attention to a certain stratagraphic distribution of the severer histopathological lesions, corresponding in location to the area designated by Brodmann[7] as *lamina* IIIa.

Other writers (Suckling,[8] Moebius[9]) have argued an anlage—developmental disturbances, more specifically an arrested differentiation of the cortical layers, whereby a certain infantile or embryonic lamination persists. This arrested cortical differentiation

affects particularly the types of cortex which Brodmann has classed as *heterotypischen Formationen.*

For the etiology of Huntingdon's chorea, Kolpin[10] makes responsible a combination of all of the factors which we have mentioned. Thus in the conclusion of Koplin's paper one may read the following:

"Die Huntingtonsche Chorea ist der Ausdruk einer diffusen Erkrankung des Zentralnervensystems, insbesondere des Grosshirns. Sie entwickelt sich auf einer degenerativen Grundlage, d. h. sie hat zur Voraussetzung ein minderwertiges Gehirn. Diese Minderwertigkeit kann sich dokumentieren durch strukturelle Anomalien, die in Form einer Art von Entwicklungshemmung (Stehenbleiben einzelner Rindenterritorien auf einem infantilen resp. juvenilen Schichtungstypus, Vorkommen cellulärer Jugendformen) nachzuweisen sind. Der Krankheitsprozess selbst ist charakterisiert durch das Zugrundegehen nervöser Bestandteille sowohl in der Hirnrinde wie in den subcorticalen Ganglien, das bisweilen zu recht beträchtlicher Atrophie des Gehirns führen kann. Neben den atrophischen Vorgängen finden sich in manchen Fällen reparatorischen Wucherungen von seiten der Glia. Die vorderen Partien des Gehirns pflegen stärker wie die hinteren, die oberen Rindenschichten mehr wie die unteren betroffen zu sein."

While admitting that degenerative lesions may be found with great regularity in the cortex of persons dying of Huntingdon's chorea, Alzheimer[11] thinks it debatable that along with these cortical changes developmental disturbances can also be established, nor does he believe that the cortical lesions play any great rôle in the production of the characteristic choreic movements. He is of the opinion that the anatomical substrate, of choreic movements in general, is to be found in the alterations seen in the basal ganglia and subthalamic region. Two cases of Huntingdon's chorea and two each of septic and rheumatic chorea studied by Alzheimer exhibited the severest lesions in the regions mentioned. The character of these basal ganglia and subthalamic region changes will be considered later in the course of this paper.

The case here reported, among other things, seems to us of interest for the following reasons: first the evident familial character of his affection, for he is the fourteenth known member of the family to suffer from chorea within five generations; second, most of the known cases in this family have developed chorea late in life; third, certain mental symptoms and histopathological alterations of the brain, particularly the latter, must be classed as the result of senile involution, so that one is at a loss how much of the final mental picture to attribute to a coincident senium and how much to Huntingdon's chorea. Moreover, the question has arisen in our minds as to whether or not we were dealing with an actual case of Huntingdon's chorea or a senile chorea which, as commonly happens with arteriosclerosis, has tended to occur in the family of this man. A further question has

also arisen. Assuming an anlage as requisite for the development of Huntingdon's chorea, and that the weak spot, so to speak, is not the type of cerebral cortex mentioned above, but the basal ganglia, can this anlage be made to do duty for senile chorea and the symptomatic choreas following septicæmia and rheumatism? Our case presented histopathological alterations in the basal ganglia and subthalamaic region comparable to those described by Alzheimer[11] for Huntingdon's chorea, though less stormy in character. The cerebral cortical changes were so like those described by one of us (elsewhere in this volume[12]) for certain cases of senile dementia (miliary plaques and Alzheimer degeneration of ganglion cells in hippocampal gyri and cornu Ammonis) that it seems futile to attempt to establish any stratigraphic distribution of the lesions with reference to Huntingdon's chorea.

The history of the case is as follows:

No. 9959, a man of eighty years, presenting a rather pronounced chorea and considerable mental enfeeblement, was admitted to Westborough State Hospital, Jan. 28, 1912.

Family History. (Furnished by wife and son). In the three generations preceding, similar cases of chorea have occurred in the family, but of these there are only two of which the informants have any detailed knowledge, Lydia S., the patient's mother and Jesse an uncle. Lydia S. developed the disease between the age of forty and fifty, later dying after a psychosis had supervened. Jesse, the brother of Lydia also developed the disease at middle life and he had a son who died from chorea (age of development not known). Lydia S. was the mother of thirteen children. The first two children, Harriet and Orra, and Walter (patient) the twelfth child, suffered from chorea. Harriet developed the disease in middle life and had pronounced mental symptoms. She was the mother of four children and one of these, a daughter, developed a similar condition at the age of forty-five, dying fifteen years later. Orra is reported to have been a brilliant woman. She did not develop the disease until late in life, between sixty and seventy, but it is said that her condition was never as severe as that of her sister Harriet, or her brother Walter (patient). Orra was the mother of two sons, neither developed the disease and both died without issue. Walter (patient) is the father of three children. One of his children died in infancy (scarlet fever), the other two, a daughter of fifty-three and a son of forty-five, are well and free from signs of chorea. The daughter of Walter had two children, one died of tuberculosis at the age of twenty, the other now in young adult life is free from the disease. The son of Walter has one child, a son, who is also free from chorea.

Thus, including Lydia and Jesse, seven cases of chorea are

known in three generations. Seven other cases are known to have occurred in the two generations preceding Lydia and Jesse, but of these data is inadequate and not trustworthy as to exact relationship. It is more of the nature of tradition that seven members had suffered from the disease.

Previous History. When the patient was five years of age he met with an accident, falling from a rocky embankment into a body of water and was nearly drowned. He was resuscitated only after several hours' work over him. Aside from this, no serious illness or accident is reported until he was fifty when he again met with an accident—he cut his knee severely with an axe. About twenty years ago, when he was sixty, he began to have choreic movements. Two years later he met with still another accident, a log rolled over him, crushing one of his hips. After this the choreic movements became more pronounced and have steadily grown worse. His family did not notice any mental change until five years ago—speech disturbance, difficulty in making himself understood, and irritability as a result. During the last two years he has been hallucinated, spoke of a twin brother who was constantly around talking to him and wearing his clothes, etc. During the ten days prior to admission he had been very restless, particularly at night; had talked a great deal in a rambling, disconnected manner; and fabricated experiences of adventures.

He has never been a drinking man. Most of his life has been spent as a farmer, and he has borne a reputation for thrift and integrity. Education was limited to a year in high school. Since the development of his chorea, he has shown a fondness for reading and has spent much of the time reading, or at least with a book in his hand as though reading.

Here. On admission pronounced choreic movements of the extremities, torso, head, tongue and pharyngeal muscles, the latter rendering speech extremely difficult, not only to emit but also to understand. General nutrition is fair; heart's action is irregular and tumultuous; systolic murmur heard at apex; pulse rapid and soft; varicose veins of the legs. The tonsils are enlarged, the buccal mucosa dry, and there are sordes on the lips, teeth and gums; albumin and casts in urine; no pathological lesions of abdominal viscera detected. A large reducible inguinal hernia presents on right side and a smaller hernia of the same character on the left side. Sebaceous cysts over left flank and over both scapulæ; skin sallow and scrawny; recent bruises.

The pupils measure approx. 3mm. in diam., and react to light and accommodation. There is a catarrhal conjunctivitis. Patient does not cooperate further in the sensory examinations, but hearing is somewhat impaired. There are no paralyses;

some tremor is noted in the intervals between the choreic movements; no contractures. The gait is frequently interfered with by the choreic movements; it is erratic, seldom reaching the intended goal, otherwise there is nothing save a degree of trepidancy.

Mentally, he was very irritable, pugnacious and resistive. It is necessary to employ considerable tact in order to accomplish anything with him. When told that he was in a hospital for the insane, he remarked, "I am damned glad of it." He had said previously that he knew he was in hospital, but did not know what kind. Once during the interview he said his son was the foreman of this building, this after he had been told its nature. He denied hallucinations and insisted that he was perfectly well mentally and physically. When it was suggested that it was difficult for him to control the movements of his arms and legs, he was very indignant, insisting that he had perfect control over them.

His memory, he said, was fine, but on the day after his admission he could not tell how long here, give his age correctly, the date of his marriage, the number of his children, or even his own first name. He also romanced freely when asked to give an account of what he had done the two days previous. There are ill defined ideas of persecution, he thinks his son has not dealt properly with him.

Excepting occasional periods of excitement and restlessness with which there was some mental confusion, the above condition remained much the same until March 14. His right arm became infected through an abrasion produced by banging it in one of the choreic movements. The infection, a staphylococcus, grew worse rapidly; he was confused most of the time and very weak, dying six days later, March 19, after a hospital residence of one month and nineteen days.

Autopsy three hours post mortem.

Anatomical Diagnosis. Chronic external pachymeningitis, chronic proliferative leptomeningitis, cerebral atrophy—particularly of corpus striatum—advanced cerebral arteriosclerosis; chronic endocarditis; moderate pulmonary hypostasis (rt.); passive congestion of liver; splenic congestion; congestion of gastric mucosa, calcification of mesenteric lymph glands; chronic interstitial nephritis; infected incised wounds of right hand and arm.

Abstract of Autopsy Protocol. The calvarium is of increased density and diploë are scant. The dura is abnormally adherent—it is necessary to cut through the membrane in order to remove the skull cap. The pia is congested, edematous and opaque, the opacity rather generally distributed over the convex and mesial

surfaces of the cerebrum. There is also some clouding of the membrane over the basal portion of the frontal lobes and of the portion of the membrane distributed to the anterior and posterior perforated spaces. The large vessels of the base and some of the smaller twigs distributed to the convex and mesial surfaces of the cerebrum are markedly sclerotic and atheromatous. The whole brain is congested. The cerebral gyri are rather generally atrophied; the sulci tend to gape, particularly in the frontal lobes. The cerebral hemispheres are symmetrical, and the surface topography of the brain shows no variations which may be interpreted as abnormal. Despite the apparent atrophy, the general consistence of the brain may be described as soft, certainly not as firm as many brains which show a like degree of atrophy. The hypophysis and its fossa offer no gross lesions. The brain with pia attached, and before sectioning, weighs 1006.4 grams.

The cord is congested, its pia slightly clouded, exhibiting a few small osteomata. Other than this the cord offers no macroscopic alterations. After removal of small blocks of brain and segments of the cord for fixation in alcohol, Flemming's solution and Weigert's glia mordant, the remaining portions were fixed *en masse* in 10 per cent formalin.

Section of Brain after Formalin Fixation. Coronal sections were taken at intervals of one centimetre through the cerebrum, pons and cerebellum. The most striking features revealed are, atrophy and gaping sulci, noted in the fresh brain, a rather marked atrophy of the basal ganglia, particularly of the caudate nucleus and the gray substance of the subthalamic region. (Figs. 1, 2, 3 and 4.) These photographs are taken to represent the exact size of the brain. The slight loss in focus of Figs. 2 and 3, however, have produced a slight enlargement in the perpendicular and horizontal diameters, but this by measurement is less than 2 mm.

In Fig. 4, at a point indicated by an arrow, is shown a small pear-shaped mass of gray matter, slightly superior to and mesial to the tegmentum and isolated from the subthalamic gray matter, inclosed save at its most inferior portion by white matter. Streaming into this isolated gray mass are fine strands of white fibers. Microscopically the area is crowded with rather large ganglion cells, very much after the character of the ganglion cells found in the nucleus of Luys'.

Microsopical Examination. In sections stained with toluidin blue after alcohol fixation, one finds in the cerebral cortex (prefrontal area F1 and F2, F3, left tranverse temporal gyri, left, paracentral and antr. central of both sides, supr. parietal right and calcarine type of cortex) extensive chronic nerve cell changes—rich lipoid

content, particularly of the cells of the outer laminæ and the smaller cells of the deeper layers, dark staining, tortuous dendrites and many shadow forms of the small and medium size pyramidal cells, many areas (usually round and indiscriminately distributed through cortex, particularly in paracentral, anterior central, hippocampal gyrus and cornu Ammonis) in which there are no cellular contents. These areas are shown by other methods to be the position of so-called senile plaques. Glia nuclei are increased throughout the cortex, and this is particularly noticeable in the molecular layer, where in some areas it is very marked. The blood vessels, alike in pia and cortex, present progressive-regressive changes and many very small vessels are shown in a state of calcareous degeneration. In addition, many small hæmorrhages are encountered, usually in the outer laminæ of the cortex, but also in the other layers and in the white substance, generally encircling a small vessel. There are numerous small, circular clear spaces, having much the appearance of the post mortem air cysts of *B. aerogenes capsulatus*, but these we are convinced are simply residuals of small hæmorrhages, for in some of them may be seen the rests of erythrocytes. None of these cyst-like areas or even the fresh hæmorrhages show any reaction in their immediate vicinity of the glia or nervous apparatus which can be demonstrated in Nissl toluidin blue specimens, or with the IV, V, VI procedures of Alzheimer, except recent hæmorrhages in basal ganglia around which are amœboid glia cells. With Mann's stain, acid fuchsin-light green stains and the Bielschowsky silver impregnation numerous senile plaques are encountered in all areas of the cortex examined, but most numerous in the hippocampal gyrus and cornu Ammonis, and in the paracentral and anterior central cortex. In the cornu Ammonis ganglion cells showing the so-called basket form of degeneration are encountered.

When the basal ganglia are examined (caudate, lenticular, Luys, thalamus and red nuclei) even more extensive degenerations of the nervous apparatus are shown. We did not find a single ganglion cell which could be described as anywhere near normal. All of the ganglion cells remaining were greatly crowded with lipoid granules, for the most part yellowish granules, but along with these, in the Mann stained specimens, were numerous blue granules. Intermingled with the fibers were many glia cells of the type described by Alzheimer as amœboid glia cells. Some of these cells were very large, larger than some of the large ganglion cells of these nuclei and were found where there was evident recent alteration of fibres. Often in their vicinity were bluish tinged masses of varying nuance and size. These large cells, however, were not frequently encountered, the smaller

type of amœboid glia cells predominating, and only very rarely were they associated with the presence of so-called *Fuhlkorperchen.*

In the spinal cord, by none of the methods employed, were acute changes found, such as Alzheimer[11] has illustrated from a section stained with Mann's solution. The changes here are evidently chronic in character. Appreciable glia fiber proliferation is shown, particularly in the lateral columns. In addition numerous amyloid bodies and the hæmorrhages described above are also seen. The ganglion cells of the gray matter while many of them evidence chronic nerve cell changes, are better preserved than ganglion cells elsewhere encountered.

Resume. A man of eighty, the fourteenth known member of his family within five generations to suffer from a chronic progressive chorea, developed the disease at the age of sixty, but is said to have preserved his usual mentality for fifteen years after its onset, when he began to show mental symptoms resembling the mental disorder of senium. Anatomically, in the cortex, the lesions were like those which have been described for severe senile dementia, and in addition to these, chronic and acute degenerations in the basal ganglia, the latter characterized by the presence of many so-called amœboid glia cells and split products of pathological metabolism of nervous elements, the so-called *Fuhlkorperchen.* The histopathological lesions on the whole are quite comparable to those described by Alzheimer for Huntingdon's chorea, though less stormy in character.

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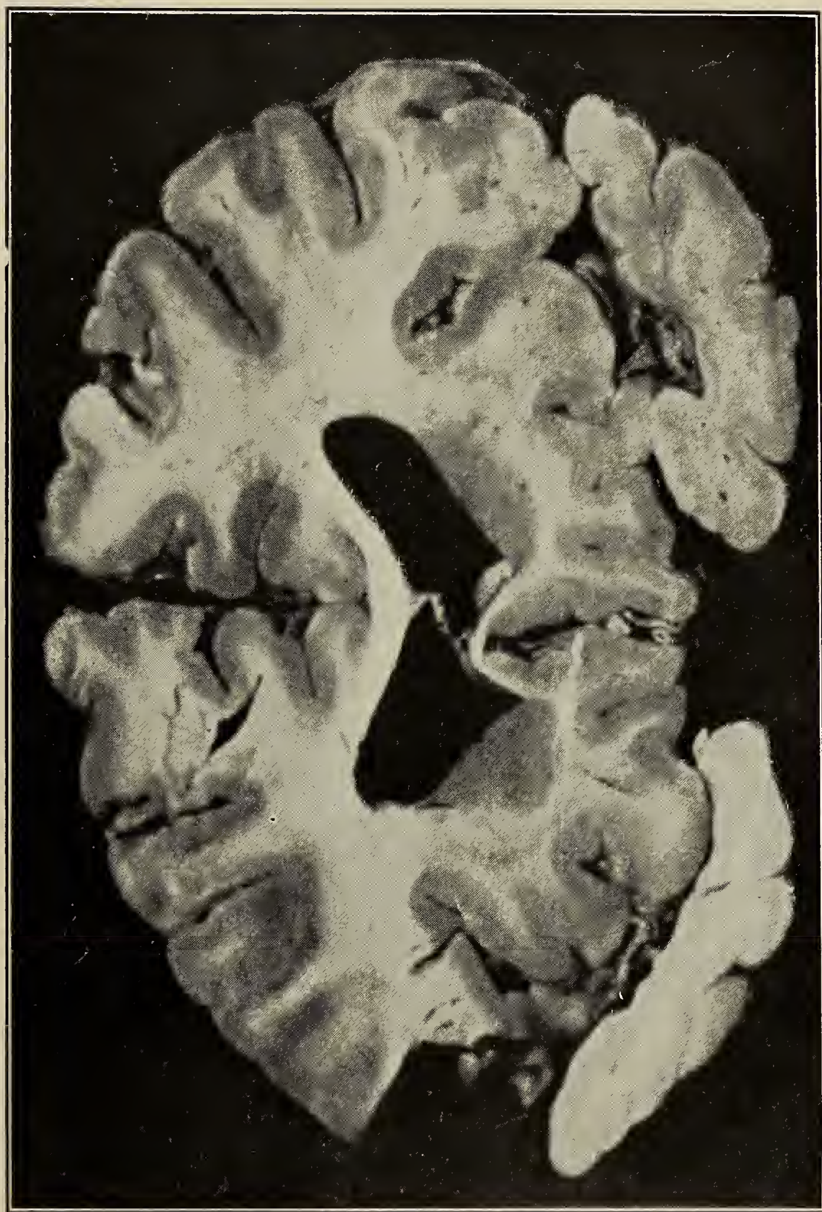

Fig. 1

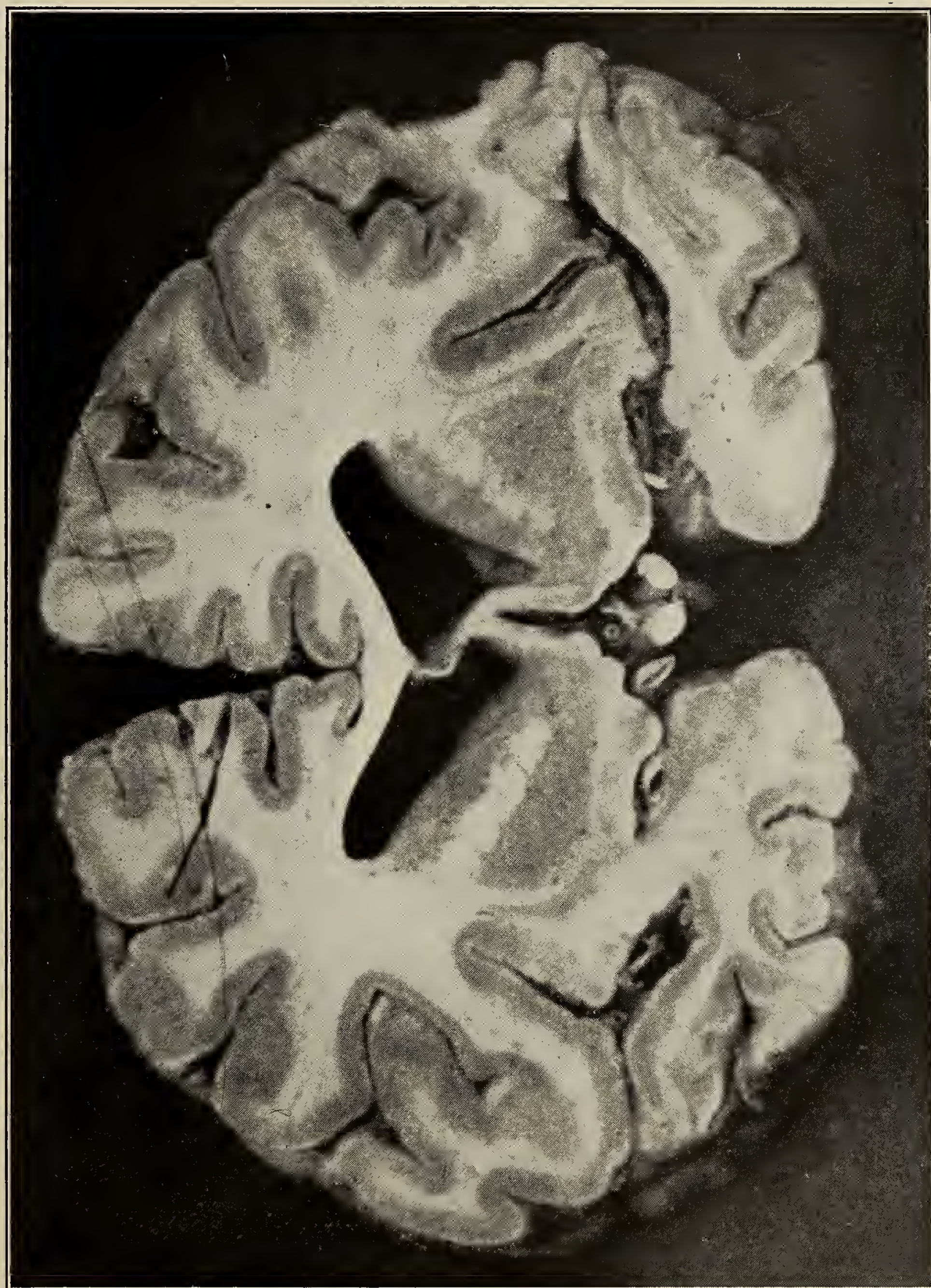

Fig. 2

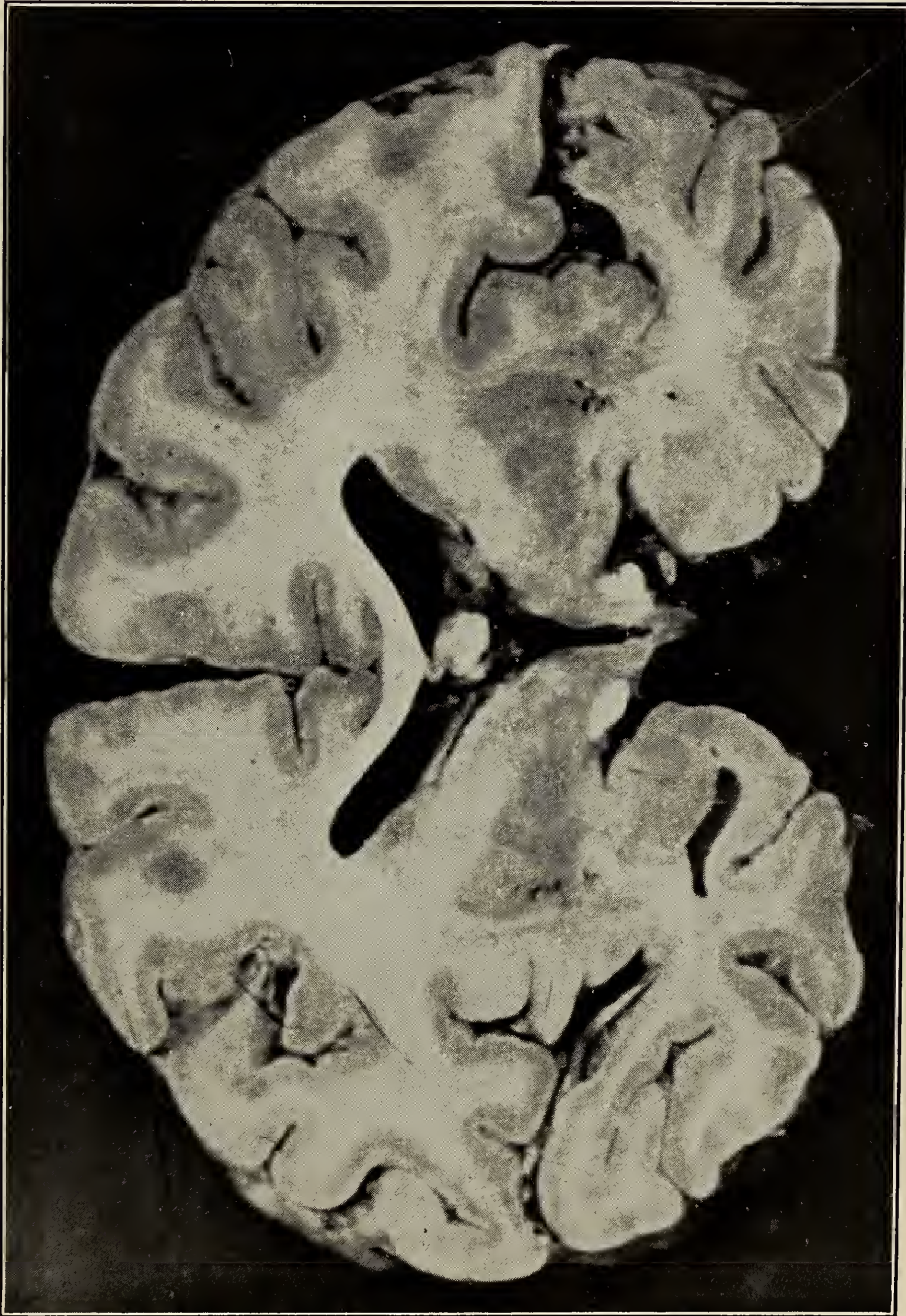

Fig. 3

FIG. 4

THE NEW ENGLAND MEDICAL GAZETTE

VOL. XLVII OCTOBER, 1912 No. 10

ORIGINAL COMMUNICATIONS.

FOREWORD.

A Symposium of Homœopathy.

The high order of papers read at the meeting of the American Institute of Homœopathy at Pittsburgh in June last, in the various sections pertaining to Homœopathy, was such as to make them worthy of being given an entire number of the *Gazette*. We doubt if a session of any other medical society or organization in this country has ever produced a like grade of papers on materia medica and therapeutics. The bitterest opponent or the most carping critic of Homœopathy cannot fail to read both in substance and between the lines the ever manifest spirit of honest endeavor to find the truth, to be scientifically correct, and to be sane in deductions. Akin to this earnestness is felt the abiding but ever growing faith in the scientific reasonableness of the law of similars.

When medical men possessed of the mental calibre of James H. McClelland, O. S. Runnels, George Royal, Charles E. Walton, George F. Laidlaw and Frank W. Patch, men who with an open mind have kept in the forefront of medical progress, ready to try out and adopt any therapeutic agent of recognized value, will declare, after a successful practice of twenty to thirty years, an increasing faith in the efficacy of the law of similars, their statements demand at least an impartial hearing. The contributions to this number of the *Gazette* are from men eminent in surgery, gynæcology, internal medicine, diagnosis, general medicine, and pathology, hence the opinions are not those of men who pin all their faith to internal medicine alone, nor of fossilized men who have not kept step with medical progress; but they are the opinions and utterances of men who have learned from wide experience the relative values of all therapeutic agents.

ADDRESS OF CHAIRMAN OF THE BUREAU OF MATERIA MEDICA AND GENERAL THERAPEUTICS, PITTSBURGH MEETING OF THE AMERICAN INSTITUTE OF HOMŒOPATHY.

J. Herbert Moore, M. D., Brookline, Boston, Mass.

Homœopathic materia medica and therapeutics are not the only materia medica and therapeutics in either the general or special practice of medicine, but homœopathic materia medica and therapeutics occupy such a paramount place in the practice of medicine that no physician, whatever the school of medicine with which he may be allied, can do full justice to his profession, to his patients or to himself unless he thoroughly equips himself with all that homœopathic materia medica and therapeutics have to offer in the treatment of the sick.

The purpose of the Chairman in presenting to this Bureau of the American Institute of Homœopathy a symposium on "The Value of Homœopathic Remedies in the Practice of Our Specialists" is to emphasize this paramount place which Homœopathy does occupy in the practice of medicine, and to emphasize the duty of all physicians, irrespective of school of medicine, to equip themselves in the knowledge and practice of homœopathic medicine.

Some of you may ask why is it necessary to emphasize this matter before a body of homœopathic physicians.

In the first place we should emphasize the necessity for teaching the principles and practice of homœopathy in our colleges, not only in the chairs of homœopathic philosophy, materia medica and therapeutics, but all along the line of work in other departments of instruction in which homœopathic teaching may be appropriately emphasized, and this should be done from the time the student first enters the medical school.

The necessity for such teaching lies in this fact: there is no question but what, to-day, there are quite a considerable number of students who enter our colleges with no fixed purpose of acquiring an education in homœopathic medicine. They enter our medical schools because they are smaller than many of the older school institutions, and because they reason that they will be given more individual attention in clinical and laboratory work. I believe that right here missionary work can be done with these men who, prior to entering the medical school, have had absolutely no affiliation with homœopathy. Personally I am very sorry that the old days of preceptorship have disappeared. Many young men get no direct start toward homœopathy as they did in the old days of preceptorship with a hard-headed homœopathic practitioner.

In the second place we should emphasize the necessity for making greater effort, both during our teaching and by our example, to influence the young students to accept the clinical findings of homœopathy, and when they leave the medical school to put them into practice in order that they may obtain the best results in their own therapeutic work.

Some of you may feel that special attempt along this line is not necessary. On the contrary it is necessary for the reason that some of our students, graduating from homœopathic colleges, do not remain as true to homœopathic prescribing as they should. Too many yield to the present day influences of substituting palliative physiological therapeutics where curative homœopathic therapeutics are indicated, and allow the various pharmaceutical houses and agents to do their prescribing for them by means of combined medicines such as the combination tablets, et cetera.

In the third place we should influence the younger practitioners to look beyond their individual clinical results in their office and bedside work to the broader field of the progress of homœopathic medicine. To this end we should stimulate them, and I designate the younger practitioners because they are more competent workers in the laboratory field than the majority of the older men, to take a hand in demonstrating the truth of homœopathy by laboratory findings.

To be more specific, there are three things we must demonstrate in our research of the laboratory: first, the scientific status of the homœopathic principle of homœopathy, as is already being done in serum and vaccine therapy; second, a scientific and practical materia medica by drug provings from the physiological and pharmacological sides, affording us remedial agents and their exact indications by which they may be prescribed against disease in accordance with this principle; and third, and none the less important, a scientific and practical posology, inasmuch as a reliable posology is as essential to the proper action of a remedy, as is a reliable materia medica to the proper selection of the remedy.

The clinical test at the bedside is satisfactory to every real homœopathic physician on this floor this morning, but alone it is neither satisfactory nor sufficient to the physician who has never had any affiliation or experience with homœopathy.

These three factors which we have been considering lead up to the final desideratum: that homœopathy shall be awarded its proper place in medicine, not only by individual members of the older school of medicine, but by dominant medicine as a whole, and by the laity outside of medicine.

When we shall have made such use of our laboratories, and recorded in a systematic manner the clinical results of our hospi-

tals, then will scientific and practical homœopathy have found itself, and demand and receive recognition from the dominant school of medicine.

It will interest you to know that at the alumni banquet of the New York Homœopathic Medical College, held in New York on May 30, Dr. Maurice J. Lewi, Secretary of the New York State Board of Medical Examiners, in the course of a very fair and square address, made the statement that "Homœopathy, to-day, is a *part of scientific medicine*".

If he, in the course of his official work, has become convinced of this fact, are we, as homœopathic physicians, and the American Institute of Homœopathy, as our national organization, doing all we can to obtain from the profession at large a recognition of homœopathy as a part of scientific medicine?

The present is the psychological time in the progress of homœopathy to meet this question squarely, by bending all our effort, as individuals and organizations, to obtain this result. If we older men will stand by our guns and in our teaching, practice and example convince our young men of the clinical efficiency of homœopathy and influence them to lend themselves to the progress of homœopathy as has been outlined above, our combined efforts, aided by popular opinion on the part of the laity, will result in a due recognition from the older school of medicine, and the teaching of homœopathic materia medica and therapeutics in their medical colleges.

After careful consideration of how some missionary work might be done in this bureau, this year, looking toward a realization of these matters, which have been so imperfectly presented in this foreword but which have been very near to the chairman's heart for a long time, it occurred to him to draft our specialists into service, who, from their commanding position in the profession and from their influence both in the profession and with the laity, might prove an inspiration to the younger men of our own ranks and possibly carry conviction to the younger men of the old school ranks by making them realize that our special men *do* recognize the value of homœopathic remedies, employ them in their practice and from them obtain most satisfactory results.

How well they have responded is attested by the program.

The chairman desires to thank them for their almost unanimous acceptance of the invitation to take part in the bureau work, for their enthusiastic approval of the work when replying to the invitation and for the earnestness expressed in the essays and discussions presented.

HAHNEMANN, THE LEADER OF A GREAT REFORMATION.*

By J. H. McClelland, M. D., Pittsburgh, Pa.

It is no small task to overturn theories and conditions that have been held hard and fast under the pressure of centuries. We may on the contrary assert that to overturn long accepted systems, to revolutionize, in fact, rooted opinions and practices requires genius of highest order,—requires unswerving purpose, indeed requires all the elements that go to constitute the leader of a great reformation.

I am assigned the duty of presenting the name of Samuel Hahnemann as the leader of a great reformation in medicine. We might inquire first as to the necessity for reform in the practice of medicine at the time Hahnemann appeared on the scene.

The history of the period fully recounts the utterly chaotic condition of so called medical science. Signs of upheaval there were, to be sure, in general learning. One of the allied sciences, chemistry, was awakening to fresh efforts and discoveries. Hahnemann himself had been complimented by the famous Berzelius as a chemist of great originality—his soluble mercury and tests for arsenic may be mentioned, but the practice of medicine itself remained, to say the least, uncertain, injurious and altogether without chart or compass. The vaunted remedy of yesterday was found to be utterly useless and even destructive today. Polypharmacy was rampant; ten, twenty,—a hundred different ingredients commonly made up a single prescription.

Druggists were truthfully designated as "compounders." The use of drastic drugs was almost universal and the mortality from almost every disease was truly appalling. Diseases lasted months that should only have lasted weeks, and twenty people died when there should have been but five. One was led to exclaim "if all the drugs in the world were cast into the sea it would be all the better for mankind and all the worse for the fishes."

At this period, too, it was counted good practice in all acute diseases, even typhoid fever, to bleed to the point of syncope. The lack of a true therapeutic system or governing principle in medicine gave full scope to individual theorizing, or what might be termed the building of air-castles of a medical sort. The Faculty of the day talked of Hippocrates, Celsus and Galen as if no advance had been made since their day,—as was well nigh the case. Brunonianism, Callenism, Brousscisism, Solidism, or humoralism ruled the hour, and in each case was heralded as the acme of science.

The pressing necessity of the time, therefore, was not simply a question of beliefs and doctrines—of words and theories—it was

*Read before the American Institute of Homœopathy, June, 1912.

the paramount problem of saving human lives, of arresting the existing destructive methods in medicine. A widespread feeling of distrust and doubt was permeating the profession and the people as well.

It was at this critical period, as has been said, that Hahnemann appeared on the scene. A man of profound erudition, he was thoroughly acquainted with the learning of the schools, ancient and modern. Not only was he familiar with the medicine of the Greeks and Romans, but he laid tribute as well to the Arabic and Chaldaic. He was thorough master of the masters of all time, and he realized that the practice of his own period was little if any better than that of the most ancient.

It is little wonder, therefore, that he turned his back on the so-called science of medicine, and undertook the task of exposing its absurdities. One cannot express it better than to quote again the honest deliverance of the late John Syre Bristowe, once President of the British Medical Association, who recognizing the service rendered to the profession and humanity by Hahnemann, expressed his opinion on him in the following unequivocal language: "He saw through the prevalent therapeutic absurdities and impostures of the day:—he laughed to scorn the complicated and loathsome nostrums which even at that time disgraced the pharmacopeias, and he exposed with no little skill and success the worthlessness of most of the therapeutic systems which then and theretofore prevailed."

It was a long and acrimonious contest that followed. The powerful philippics hurled by Hahnemann against the destructive methods of the time could not fail to bring down upon him the violent opposition of the Faculty, and he accordingly suffered greatly, as did his followers, for many a year. But this did not deter him from a courageous pursuit of his life's work. His masterly mind was ever active in its research for truth, and this way led to the discovery of the great cardinal principle that underlies the practice of scientific medicine today, a principle governing the curative application of drugs to disease, a principle founded on natural law.

After years of patient toil, making sure that he had discovered the very truth, that medicine could be employed for the relief of the sick in a rational and scientific manner, he freely gave his discovery to the world.

But the practical application of this discovery, like that of almost any great discovery, was no easy matter. There was no exact record of the effect of drugs on the human organism by which to ascertain their scope and power for the healing of the sick.

It was therefore necessary to create an entirely new materia medica, and so, with his faithful followers, he began a series of experiments to ascertain the exact effect of drugs, not upon animals

but upon human beings, and human beings in health, moreover. This was a mighty task and occupied the best years of his life, but it was a task the accomplishment of which has made all mankind his debtor, to the latest generations.

This is an old, old story to most of you, my colleagues, but as the new generations come on it is well to recount the deeds of the old, that they may be kept in remembrance.

In view of the foregoing, then, let us consider what claims we may make that Hahnemann was the leader or creator of a reformation in the healing art. Even by the testimony of his enemies it is conceded that he exposed the absurdities and fallacies of the medical practices of his day. He showed how human life was daily being sacrificed in the name of the humane science of medicine, and then with all the power of genius he developed on scientific lines an entirely distinct and rational practice of the healing art.

He founded a school of medicine with more adherents, a greater number of assailants, more extensive literature, and one that has extended a greater influence upon the art of healing than any which preceded it, and, according to Sir John Forbes, "His name will descend to posterity as the exclusive founder of an original system of medicine, the remote, if not the immediate cause of more important fundamental changes in the healing art than have resulted from any since the days of Galen himself."

All great movements for the enlightenment and elevation of mankind have been inaugurated under the leadership of genius mighty enough to rend asunder the bonds of conservatism.

Such a leader was Hahnemann.

His achievements marked the dawn of a new era in history. He laid his hand of steel upon the dangerous practices of his day and mightily wrenched the untenable hypotheses which served as a foundation for the practice of the period.

Instead of this he offered for the first time a scientific basis for the application of drugs to disease, instead of uncertain theories and more questionable methods, instead of fads and fancies which have ever pervaded the practice of medicine, he substituted law and order.

Whatever science may bring to light today or tomorrow in restoring health to the sick, nature's own mandate that "likes shall be treated by likes" shall ever remain as a guiding rule for the treatment of the sick; a rule based on natural law.

President George Burford, M. B., C. M., of the late International Congress in London,—in his scholarly address (nothing finer in the language) epitomizes all definition in the following terse paragraph:—

"Homœopathy is the organization and development of the law of similars in its widest application; and the chief verification of

Homœopathy is itself. It is the results in drug practice—the issues of its actual application to the problems of sickness and suffering that rank it as a part of the order of nature; that mark it as a great instrument devised by nature for obliterating the discords of disease. How great this instrument has been in the past you may visualize by picturing the wholesale reforms in medicine effected by its compelling power."

It is not claimed by the followers of Hahnemann that he was the first or only one that touched on the idea of similars. Hippocrates had intimated that some diseases were cured by similars and some by contraries, that the colic-producing Hellebore would cure colic, but these were transient and individual observations. So also Paracelsus or his disciple, Johann Rhummel, a century or so before Hahnemann, made mention of the phrase *Similia Similibus Curentur,* and yet they went no farther.

Our own Benjamin Franklin conducted electricity from the clouds, but Morse created the wire language by which thought has encircled the world quicker than even Puck predicted.

It was Hahnemann who discovered, or re-discovered, if you please, the law governing the relation of drugs to disease in all their constancy. But also it was he that, by the creation of a materia medica, practically placed the manifested evidences of disease, called symptoms, in one column, and the recorded effects of drugs in the other,—not the deadly parallel, my colleagues, but the benign, pointing towards health.

Again Hahnemann may not have been the first to advocate the proving of drugs on the healthy human organism; it may have been Albrecht von Haller; but it was Hahnemann who not only advocated this method as the only scientific one, but proceeded to produce materia medica pura by this method.

There is an interesting confirmation of the absolute necessity of this method reported by Vaughn and Novy (p. 26) with regard to the action of bacteria, namely, that "A given bacterium may not multiply in the blood of a dog, and failure to do so is by no means proof that the same organism might not cause disease in man."

The same is true of drugs. Hahnemann's contention is proven correct by latest scientific research. No one can deny also that Hahnemann taught the value of diminished and divided doses, the cause of much good natured and bad natured badinage, but recent developments have again confirmed the value of this therapeutic requirement.

Think of the confirmatory experiments of Robin with infinitesimal quantities of the metals, of the constantly diminishing doses of tuberculin from the time of Koch to the present of Troudeau, of the amazing power of Radium rays and of X rays, indeed of the

general discoveries in the direction of the power of imponderables. Was Hahnemann so far astray?

No one can successfully deny that the principles enunciated by Hahnemann largely pervade the practice of medicine today, by whatever name it goes, whether in the use of drugs, or vaccines or serums or even X-rays; but it is not alone in the founding of a school of medicine that he is entitled to high place in the Walhalla of scientific worthies,—it is to the great fact that by the introduction of mild and gentle yet potent methods in the treatment of the sick, he abolished and made unnecessary the violent, drastic and destructive methods which prevailed, and that he was the prime and moving cause of a tremendous change in the practice of the healing art gradually made manifest throughout the nineteenth century, and still exerting its influence to this day.

More than a hundred years have passed since Hahnemann proclaimed a law of cure and elaborated the methods by which it was made effective for the healing of the nations. Since then the practice of medicine has been revolutionized. All of his theories and deductions have not stood the test of modern scientific developments,nor should this excite unfavorable comment. The theories of the greatest scientists of the world are times without number found untenable,—nevertheless, it is amazing how much of his work stands unshaken;—the truth is always the truth.

We can therefore with confidence conclude that the history of medicine in all ages presents no figure at all comparable to this great leader and we may further conclude that the whole civilized world is and will remain his debtor.

DIAGNOSIS AS RELATED TO THE SELECTION OF THE INDICATED REMEDY AND THE METHOD OF ITS SELECTION.*

By George Royal, M. D., Des Moines, Iowa.

Mr. Chairman and Members of the Bureau:

You have been told by those who preceded me what diagnosis is, its weak and its strong points. You have been told the parts which urinalysis, bacteriology and blood examination play in making a diagnosis. In short, you have been told, in a general way, the advantages of being a good diagnostician. If I understand the subject assigned me, I am to demonstrate the advantage of diagnosis in a special sense, namely, in the selection of the indicated remedy and the method of its selection.

In such a discussion, as in many other things in life, it is very important to get a right start; therefore I want a clear understanding as to what we shall attempt. To do this I want to state in my own words, and as briefly as possible, the definition of diagnosis. Let it be as follows: the study of symptoms for the purpose of classifying diseases. Now let me make a statement. The only method by which the indicated remedy can be properly selected is by the study of symptoms. Therefore to me has been assigned the task of demonstrating the proposition that the study of symptoms for the purpose of classifying diseases is related to the study of symptoms for the purpose of selecting the indicated remedy,—a proposition I so fully and firmly believe that it seems to me an axiom.

I want to demonstrate our proposition by illustrative cases taken from my own practice. But before stating the cases, let me say that the study of symptoms for the purpose of diagnosis, in the majority of cases, is much less difficult than the study of symptoms for the selection of the indicated remedy; in fact, the symptomatology, for the latter always includes that of the former. Alongside of that statement let me put this other, the more difficult the diagnosis, the more difficult would be the task of selecting the indicated remedy without the diagnosis. I will make that point clearer as I cite my cases.

In addition to the two statements made above, let us keep in mind the facts which our fathers used to state frequently and emphatically: first, "that in the selection of the indicated remedy the task is three-fourths done when the case is thoroughly taken." Second, "that we should always treat the patient and never treat the disease." I also want you to realize fully that a symptom is the same whether we study it to classify diseases or to select a remedy. In either case a symptom is the manifestation of disease, and its three essentials are location, sensation and modality. And, still

*Read before the American Institute of Homœopathy, June, 1912.

more, I want you to appreciate clearly the fact that the study of a symptom means a great deal more than the mere memorizing of it. To illustrate, let us take this symptom: "A sharp pain in the left chest about the nipple." The question at once arises as to our first essential: location. Many would say, "left chest." But that is not enough, or rather, it is too comprehensive. By location with reference to a symptom we mean the tissue or organ involved. In the left chest we may have the skin, the nerves, the periosteum, the bones, the muscles of the thorax or heart, the pericardium, or the lungs, etc. Irritation or inflammation of any of these tissues or organs may cause a sharp pain. To determine whether we have an irritation or an inflammation, we must study our third essential,—modality. Is the part sensitive? Is the sharp pain aggravated or ameliorated by pressure, either direct or produced by deep inspiration, etc.? You all know that different tissues give different sensations. You all know, also, that the same tissue, a nerve, e. g., gives different sensations according as it is irritated or inflamed; according as it is situated in loose or dense tissue or organs, e. g., under the periosteum or in cellular tissue; according as it is encapsulated or non-encapsulated. It is necessary to success that we bear all these facts in mind, whether we study a symptom for the purpose of diagnosis or for the purpose of selecting the indicated remedy. Therefore the relation of diagnosis to the selection and method of selecting the indicated remedy, so far as the study of symptoms is concerned, is that of identity; the same in kind, but differing in degree and importance. To illustrate, let me cite three cases:—

Case I. John B., aged 8; dark complexion; phlegmonous, glands all large. Family history good. Personal history:—Has had measles with good recovery, and two attacks of tonsillitis. He presented the following:—"Right tonsil swollen and covered with follicles; pain on deglutition, pain in the back, aches all over; urine scanty; mucous membrane of fauces dark red." In this case the first two symptoms, swollen tonsils, covered with follicles, were enough to establish the diagnosis. These two symptoms also entered into the totality of symptoms and had much to do with the selection of the remedy for this patient. In our search for the similimum in this case we would say: Wanted, a remedy which has an elective affinity for the tonsils, which will inflame them, which will produce follicles on a mucous membrane, cause backache, etc., etc. I put much stress on the two symptoms: swollen tonsils, covered with follicles. In this elective affinity we have one of the corollaries of our law of similia. To my mind it would be folly to give a remedy which had not demonstrated that it could affect the tonsils. Furthermore, it would be useless to give a remedy affecting the tonsils which could not produce follicles as well as inflammation. This knowl-

edge, however, simply leads to a class of remedies, a class which acts upon the tonsils, causing follicular tonsillitis. In this class we find the mercuries, hydrastis, phytolacca and others. In the study of the symptoms up to this point we see the relation of diagnosis to the selection of the indicated remedy. The two symptoms are identical. As far as the essential location is concerned, they are sufficient for our diagnosis, but though very important, are wholly inadequate for the selection of the remedy. The two objective symptoms: "scanty urine and mucous membrane of fauces dark red," but more especially the three subjective symptoms: "pain in the back, pain on deglutition, and aches all over," were necessary to the selection of phytolacca. In this case we used two of the three essentials of a symptom, but the third was not used.

This elective affinity of drugs, numerically, comprises one-third of the essentials of every symptom. At this point let me stray afield just long enough to give my reasons for using the old term "elective affinity," instead of "tissue proclivity." I am perfectly aware that it is not fashionable nowadays to use the former term. I know that it is claimed that all the changes which take place when a patient is cured by the exhibition of a remedy must take place in the tissue or organs, and hence these tissues or organs, and not the remedy, are the active agents in the process. But we may as well say that in an explosion the powder is the only active agent, and that the match which ignites the powder has nothing to do with the explosion. I like the old term because, as our departed friend, Thomas McConkey, used to say, it is good homœopathic phraseology, and I feel sure that many of our old school friends dislike it for the same reason. It helps keep the faith of our students and young practitioners brighter and sounder. That is why I like the term and use it.

Case II. Chas. H., aged 7, tall, a fair, hollow-chested, precocious lad, was brought to me because "he wets the bed three or four nights a week." The father, an intelligent man and lifelong homeopathist, in reply to my question: "Any other symptom?" answered, "No." You say: "That was enough for diagnosis: a clear case of nocturnal enuresis." To be sure, but is that a complete diagnosis? Is it a satisfactory diagnosis? You may as well say that chorea is one of the neuroses. Most of us would not be satisfied with the word neurosis. We all would want the word chorea, and a few of us would want the prefix acute, electric, habit, hysterica, Huntington's, etc. Nocturnal enuresis may be due to paresis, calling for causticum or gelsemium, etc.; it may be due to catarrhal cystitis, calling for pulsatilla or hydrastis, etc.; it may be due to the irritation of calculi, calling for berberis, phosphorus, etc. To have prescribed on the one symptom, "wets the bed at night," one would

have stood about one chance in a hundred of helping the patient. Therefore I proceeded to elicit symptoms, not only for a more satisfactory diagnosis, but for the purpose of selecting the indicated remedy. I found that the boy was a poor sleeper, was fond of books, became excited easily, and that it was when unusually tired or after having been excited that he wet the bed; also that there was a very large amount of urine. These symptoms helped me, but as yet the "taking of the case" was not complete. So an urinalysis was made. Phosphates in excess, and crystals were found. A more intelligent diagnosis can now be made, one which reveals the cause of the enuresis. I also have a better idea of the totality of symptoms. a fair picture of the indicated remedy. My diagnosis has helped me in the selection. In this case our third essential, the modality, was the most important.

I have cited this case to show the relation of diagnosis to the method of selecting the remedy. I want to condemn in the strongest terms possible what I consider a most pernicious habit of teaching our materia medica by what is known as the card system—the method of putting on one side of the card the symptom: "Wets the bed at night," and on the other side the remedy which has produced that symptom, regardless of the cause, regardless of the association, regardless of the relation of this to other symptoms. As I stated, there are about one hundred remedies which have that symptom. You cannot study your symptom in relation to your patient by the card system. You cannot be a good diagnostician by the card system, the single, unrelated, unconnected symptom system. And what is more, I do not believe you can be a successful prescriber by such a system.

Case III. Mrs. L. S., aged 35. Strumous habit, dark, married. Has had several miscarriages, the period of gestation being from two to five months. Has always flowed profusely at the menstrual period and lately between menses. Blood examination, mucous membranes, murmurs, etc., showed her to be anæmic. Bowels constipated. On three or four occasions had fainted from loss of blood. There was a bearing-down sensation in the pelvis; also a feeling "as if the hips and back were falling to pieces, relieved by a tight bandage." You say the diagnosis was easy, namely, uterine hemorrhage. Yes, but, as in Case II, such a diagnosis was not satisfactory, because it did not disclose the cause of the hemorrhage. An examination was made and disclosed a small tumor in the cervix, also a large tumor in and an enlargement of the anterior wall of the uterus. The depth of the uterine cavity was six inches. We were now one step nearer a complete diagnosis. The hemorrhage was due to a tumor; but as there are several varieties of tumors, it was necessary to make a further study. The small tumor between the

external and the internal os was sub-mucous and was easily removed. Under the microscope it proved to be a fibroid. Your apparent diagnosis of uterine hemorrhage has been modified and is now fibroid of the uterus. The condition, weight and size of the uterus account for the hemorrhages, the anæmia and other symptoms. There is but one way out of our trouble, and that is to remove the tumor. There are two methods of removing it: first, surgical, which in this case, means removal of the uterus; second, medical, which means the selection of the indicated remedy. The woman absolutely refuses to be operated upon—insists on becoming a mother. There is but one thing left: select the indicated remedy and administer it. Your diagnosis compels you to find a remedy which can change the normal tissue of the uterus to tissue similar to those of a fibroid, or change fibrous tissue back to normal, or absorb it. For this purpose there come to mind secale, Billings' and Clapp's black oxide of lime, and trillium. To determine which of these three to give we cannot expect any help from our diagnosis. But here is a peculiar symptom: "sensation as if the hips and back were falling to pieces, relieved by a tight bandage," one which the patient calls special attention to; says it is a most troublesome one; that she binds the hips or puts a hard pillow under one hip and lets the weight of the body press the pelvis together to get relief. That sensation is characteristic of trillium, and that remedy, the 1x, and trillin, 3x, removed the tumor, and, what was better still, the woman became a mother. In this case the sensation led to the indicated remedy after the diagnosis had determined the class of remedies.

A Theoretical Case. For the three illustrations I have used facts and not theories. Now I want to theorize a little to show that the indicated remedy and the method of its selection are very closely related to diagnosis. Let us take up the question of serum therapy. Two years ago I stated that I felt sure that the richness of our homeopathic therapy would be greatly increased by the addition of the serums. Last year I reiterated my faith in serum therapy, but stated that two things were necessary to the realization of that faith: first, that we must prove each serum; second, that we must prepare them so that they can be administered by the mouth. This year I am ready to go one step further and say that unless we homeopathists meet these two conditions, ten years hence serum therapy will be a thing of the past. Our allopathic friends will never try to individualize the serums, and they could not if they would. One of their leading pathologists, a professor in one of our leading universities, only a few days ago, speaking of using serum in a case of puerperal infection, said: "It is foolish; it is useless. It is worse than either; it is harmful. You are throwing into the system a lot of poison which the system must take care of, in addition to the poison

already in the system." I can remember when our allopathic friends had found in baptisia the remedy for every case of typhoid fever, and in strophanthus a wonderful remedy for heart trouble. To-day those two grand remedies, together with cactus, have been relegated to the scrap heap by our old school therapeutists. And that is where the serums are going unless we homeopathists rescue them, and diagnosis is going to help rescue them. How? Let us suppose a septic case. A woman is delivered. Eighteen hours afterwards she has a chill, then the temperature soon shoots up to 105 degrees, and in a few hours it is down to 97 degrees. You have profuse sweat, thirst, restlessness, prostration, etc. You all know the picture. Your cocci are at work. You decide to fight cocci with cocci. Good! That sounds familiar. It sounds almost like similia. You decide to use a serum, but the question arises as to which one. Make your diagnosis and find out. Use every possible means at your command. Study your blood, your discharges; find out whether you have this coccus or that, whether you have typhoid or malaria germs; and having determined,—that is, made a diagnosis,—then administer that serum which has generated in the healthy or destroyed in the sick a similar germ, and your case will be cured. I believe that any physician who fails to make a complete diagnosis before administering a serum is culpable. I most heartily agree with my old-school friend, the pathologist, that to inject indiscriminately into a patient a poison is not only foolish, useless, but harmful; and I will go further and say criminal. If I have made you see what I believe, I have demonstrated the following:

1st. That all symptoms, whether we use them for making a diagnosis or selecting a remedy, are alike manifestations of disease.

2nd. That they have the same essentials—location, sensations and modalities.

3rd. That whether you acknowledge it or not, or even know it or not, it is a fact that every one who takes a case carefully, completely, for the purpose of selecting the indicated remedy, makes a diagnosis.

4th. That a physician who uses a serum without first making a complete diagnosis is culpable.

HOMŒOPATHY AND SURGERY.*

By Chas E. Walton, M. D., Cincinnati, Ohio.

It is not all of Surgery to cut,
Nor all of Medicine to dose.

This is not a paper on Homœopathy versus Surgery, nor Surgery versus Homœopathy. The theme is Homœopathy and Surgery.

Homeopathy is good; Surgery is good; but Homeopathy and Surgery is better. This is another way of expressing the old adage, "Bread is good, butter is good, but bread and butter is better." Therapy alone has a limited field. Surgery, alone, is restricted in its efforts. Their combination is a great power in solving pathological problems.

The adjuvants, common to all systems of medicine, will be eliminated from this discussion.

There was a time when the association of the terms Homœopathy and surgery was incongruous, and with the uninformed it still so remains.

Homœopathy,with its accurately applied doses, frequently accomplished what seemed to be impossible results, and surgery was discredited. Surgery, with its brilliant victories, ignoring therapeutics, arrogated to itself the only scientific treatment. Finally the limitations of each began to appear, and a union of forces became necessary to enlarge the scope of usefulness. Then was developed that most effective "fighting-machine," the homœopathic surgeon. The skill of the prescriber united with the skill of the operator produced results that neither could effect separately, and the healing art began to take its legitimate place in the estimation of the public.

A homœopathic surgeon is not a homœopathic physician who yields his operative skill alone; but a surgeon who wields his homeopathic prescribing with equal skill, either to supplant or augment operative procedure. One may be an efficient homœopath but no surgeon. Another may be an efficient surgeon but no homœopath. If he is both he can do the greatest good in modifying diseased conditions.

Homœopathy has not been devoid of renowned operators who owed their success to the combined skill of operator and prescriber. Measured by the standards of their day they stood as peers of any in the treatment of the sick. We recall with pride the prowess of Helmuth, Franklin, and Hall; Beebe, Ludlam, and Lungren; Beckwith, Bronson, and Hartshorn; Gilchrist, Schneider, and Parsons. But we must not trench on the territory of the Necrologist.

*Read before the American Institute of Homœopathy, June, 1912.

Nor shall we extol the living, for that would take us far afield, and might subject us to the charge of invidious comparison or even worse might occur if we should happen to omit the mention of some who have acquired distinction.

The classification of diseases into surgical, and otherwise, is only conventional, and serves for the purpose of convenience in academic discussion. A division into those which demand operative treatment, and those which do not, would be simpler, yet even then overlapping conditions would furnish plenty of opportunity for discussion.

To measure the influence of Homeopathy on surgery, let us take two conditions which have been looked upon as unyielding to the influence of medication, cancer and tumors. In numerous cases they have been limited in growth, lessened in size, or entirely removed. It is not a fair argument to say that if these results occurred the growth was not a cancer, or not a tumor. That was the common method of meeting the claims of Homeopathy in the treatment of cholera and diphtheria. Instead of fairly saying, "It is not possible in my experience," thereby acknowledging the impotence of some lines of treatment, it is boldly declared that the diagnosis was erroneous, or the results falsified. The same line of argument might be employed by anyone where assertions do not coincide with the experience of the objector. If this became universal, progress would be a long progressing.

A disease cured by medication is either self-limiting, or we must give the medicine credit. A disease cured by the knife is either self-limiting, or we must give credit to the knife. If both are efficacious then they become co-operative agents, not competitive agents, only so far as they furnish us with a choice of agents.

We know that the knife can cut successfully when skillfully applied. We know that medication can cure when skillfully prescribed. How do we know this? By seeing the results. Each then is good in its place and can be used to supplant, or augment the other.

The itch for operating is more than a septennial condition. With some it is perennial, with others it is semiternal. It is infectious, and at times epidemic. The itch for prescribing is sporadic. Both are frequently fatal to the patients.

It is customary at the present time to think of the "opsonic index." In a former day we thought of "vital force." If a patient's phagocytic capabilities are strong enough he will get well of certain diseases. If his "vital force" is strong enough he will recover from the diseases. If homeopathic remedies cure these diseases they do so by stimulating phagocytism or the "vital force." What difference does it make to the patient how we explain the

phenomenon? He is interested in the result, not in our philosophy.

Homeopathy is applicable wherever it can match its "simillimum" with that of the patient who has a fibroid or ovarian tumor, or cancer, or fistula-in-ano, or hemorrhoids, or shock, or gangrene, or erysipelas, or necrosis, or ascites, or hematocele, or hemorrhages, or polypi, or ranula, or ulcer, or whitlow, or warts or corns. If this enumeration provokes the credulous smile which tradition depicts upon the countenance of a Missourian, when you go home, consult the volume of of the Transactions of this Society for the meeting of 1876, where our own Helmuth, so skilful in the use of the knife, recounts case after case which has yielded to the homœopathic remedy. Or take down your "Gilchrist on Surgical Therapeutics" and renew the faith that may be waning under the cacoethes operandi which is sure to flourish when the study of the materia medica is neglected.

Have you ever stood by the bedside of a little patient who, in spite of an intubation, was gasping for breath, blue in the face, cold in the extremities, struggling for an existence which seemed to be hastening to a termination, and seen the marvelous resuscitation produced by the administration of carbo vegetabilis?

Have you ever seen a case of post-operative shock, with rapid and thready pulse, ice cold skin and perspiration, recover under the influence of veratrum album?

Have you ever seen the post-operative hemorrhage of a profoundly jaundiced patient which persisted under large doses of calcium chloride, yet speedly yielded to crotalus? If you have, you will readily admit that Homeopathy and surgery make a splendid team whether driven abreast, or tandem.

Without the resources of Homeopathy I should not want to practice surgery. Without surgery even Homœopathy cannot give the patient the best that the healing art affords.

THE VALUE OF HOMŒOPATHY TO THE INTERNIST.*

By George F. Laidlaw, M. D., New York.

The subject assigned me is the value of homœopathy to the internist. This involves two questions: first, what is an internist? and, secondly, what is homœopathy. An internist is a man who is occupied with the diagnosis of disease and its medical treatment. In that sense, we are all internists. I do not know anything or do anything that you also do not know and do every day, though, perhaps, in unusual cases, I do not have to look in the book so often. The question takes the form then, What is the value of homœopathy to the practicing physician to-day? This question appeals to me most strongly when asked by a prospective medical student what college he shall attend. Every year some young man brings up the question whether it is worth while to attend a homœopathic college, whether the knowledge of homœopathic practice will counter-balance the prestige of graduation from some well-known allopathic college; whether graduation from a homœopathic college is not a handicap, closing to the graduate opportunities in hospitals and in public service which are wide open to the graduate of an old school institution. This question must have appealed to you all as a most important one to decide, and decide justly to the young man. Is it not true that one of our chief functions here is to prepare the next generation? We do our work and make our little progress, but more important than the little we have done is the preparation of the next generation to go further, to prepare it scientifically and practically to go further than ourselves. Is it true that to carry out this purpose we should send our students to a great university for the much praised scientific training, or shall we continue to send them where they will learn also the homœopathic method? Is the knowledge of homœopathic practice of sufficient advantage to them to compensate for the lack of prestige and the opposition that still confronts the homœopathic graduate?

In taking up this question, let us see on what this prestige is based, what this wonderful scientific training is of which we hear so much and whither it is tending. To do so, consider the development of modern medicine. I might illustrate it by this diagram, beginning with Galenic medicine. We all come from Galen, whose work summed up the entire body of ancient medical knowledge. The first man to depart from Galen and therefore the first founder of modern medicine was Vesalius, in the sixteenth century, who based the study of anatomy on actual dissection. The next was

*Read before the American Institute of Homœopathy, June, 1912.

Harvey, in the seventeenth century, the founder of modern physiology. In the same century you see Malpighi working with his microscope. Back in Vesalius' time you see Paracelsus, the founder of modern chemistry and therapeutics. Paracelsus' chemistry is continued in the next century by Helmont, but his therapeutics still await some modern disciple to bring it to its full development. These different schools, the physical, the chemical, the vital, and the old Galenists were in constant quarrel, each explaining the phenomena of life and disease in its own way and denouncing its rivals until Boerhaave of Leyden gathered them all together in one comprehensive system. He drew into his system the mechanics and the dissection of Vesalius and Harvey, the microscope of Malpighi, the chemistry of Von Helmont and vitalism of Sydenham. For a time, the entire medical knowledge of Europe and America was based on the ideas of Boerhaave. Following Boerhaave came the century of system building. On the diagram you will note systems flying off in every direction, the vitalism of Stahl, the mechanism of Hoffmann, the tonic theories of Brown, the neuro-pathology of Cullen. Among these systems is thrown off the homœopathy of Hahnemann which we see running on in this narrow line to the present day. In the early part of the nineteenth century you note a line leaving the homœopathic line. This is the isopathy of Lux. Lux was the first in modern times to declare that every contagious disease contained in its discharge the remedy for its cure. The isopathy of Lux was never accepted by Hahnemann but was soon adopted by some of his followers, so that isopathy and homœopathy have run on side by side to the present time.

Now, come back to the growth of modern allopathic medicine. Back in the middle of the century of system building, Morgagni in Italy was founding modern pathology by dissecting the diseased body. At the end of that century and the beginning of the nineteenth, Laennec and the Parisian school were founding physical diagnosis. Medical research then passed to Vienna, where Skoda developed physical diagnosis still further and Rokitansky developed pathology, Schwann discovered the animal cell, Muller developed physiology and Virchow became the leader of those physicians who rejected systems and sought to base medicine upon an exact knowledge of anatomy, physiology and pathology. We must all admit that this is the true basis for scientific therapeutics, but it is a long and laborious process. These workers steadfastly rejected all systems, preferring to be therapeutic nihilists rather than to base their treatment on anything except exact physiology.

At the end of the nineteenth century comes a sharp divergence. This allopathic school, boasting of its being founded on physiology and pathology and exact diagnosis, turns toward the homœopathic

line but scarcely reaches it. Out of pathology, Pasteur has developed bacteriology. Koch, Von Behring and their followers, especially Wright, have carried bacteriology over into therapeutics, and the kind of therapeutics they developed was first the serum and then the vaccine, based on the principle that in the infectious discharge of a disease lies the remedy for its cure, exactly the principle annunciated by Lux one hundred years ago. So we see the modern allopathic school moving towards homœopathy and fusing absolutely with the ideas of Lux.

Does the fact that the allopathic college now teaches the cure of certain infectious diseases by a small dose of their own poisons render unnecessary the study of homœopathic materia medica? I do not think so. Isopathy is only a small part of homœopathy, limited to infectious diseases and still further limited to only a part of the infectious diseases. Hahnemann's homœopathy is something more than that. The homœopathy of Hahnemann was not only the use of a small dose nor even the use of the similar remedy, for Hippocrates, Paracelsus and others had mentioned both of these. Hahnemann's personal contribution to the science of medicine was his discovery of a simple and practical method of selecting a drug for a sick man by provings on the healthy. The working out of this method in its details and making it a practical method that can be taught from generation to generation, this is Hahnemann's triumph. This is the foundation of the homœopathic school to-day, and it is this idea that the allopathic school has not yet reached in its steady trend toward homœopathic doses and methods.

If all these centuries of anatomy, physiology, chemistry and pathology have only served to bring the allopathic school to the practice of isopathy, are they worth while? If an amateur with a knowledge of homœopathic materia medica can anticipate the discoveries and surpass the technic of the trained bacteriologists and the clinicians of the old school, is all this body of scientific work unnecessary? It is indeed remarkable that Hahnemann, by a brilliant generalization, should have anticipated by a hundred years the slow and steady march of scientific medicine; but can we therefore afford to ignore this anatomical, pathological diagnostic school and the knowledge that it brings? I do not think so. I have heard enthusiastic therapeutists question their value and ask of what use were our dissecting rooms and our chemical and pathological laboratories if a homœopath with his materia medica could select the better remedy for disease without all that apparatus. I will tell you the value of that knowledge. One of the oldest principles in the treatment of disease is the maxim, *remove the cause.* In the discussion this morning, the importance of this rule was brought up by several speakers and I think we all agree with

Hahnemann that the first duty of the physician is to remove the cause of disease wherever such cause is discoverable and removable. All these centuries of anatomy, physiology, pathology and chemistry and bacteriology were moving, unconsciously perhaps, toward revealing and removing the causes of disease. I want the physician who treats me to be familiar with this anatomic, pathologic and diagnostic knowledge. I want him able to locate the cause of my disease if that cause is discoverable, and to remove that cause if it is removable. I want him able to recognize an abdominal abscess or an acute peritonitis or impacted gall stone in time to apply a life-saving operation. I want him trained to recognize the early stage of a diabetes or a Bright's disease while it is still amenable to therapeutics. I want him trained to recognize tuberculosis and the anaemias in their earliest stage. But, besides all this, I want him competent to select a curative remedy. After he has learned to recognize disease in its earliest stage and to remove removable causes, I want him trained in the medical system that will cure the cases that are left. The homœopathic college to-day does all this. Even if it were not inclined to do so, the various supervising bodies and the State Boards of Examiners would require that anatomy, physiology, diagnosis and pathology and bacteriology be thoroughly taught. But I want him also to be trained in the system of curing disease not only by vaccines and by sera, not only by the isopathy either of Lux or of the bacteriologist, but I want him familiar also with the system of treating disease by selecting a remedy by provings on the healthy. If I want this in my physician, I believe that an intelligent public will want it in their physicians, and that is the reason why I think a knowledge of homœopathy of value to the practicing physician and that is the reason why I continue to send my students to a homœopathic college.

THE HOMŒOPATHY OF TOMORROW.*

By O. S. Runnels, M. D., Indianapolis, Ind.

What the morrow may bring forth is a matter of uncertainty as to incidents and happenings but not as to trend of events. That the sun will shine is assured regardless of the clouds that may flit across the field. That harvests will follow seed time and that cosmic laws will continue to operate, none is sceptical enough to deny. The future will be very much like the past. It will have in its granary all the gleanings, all the results of experience, and will have on its program not only all the uncompleted events left over, but the new work of the day superadded. The day after this will be the inheritor of all that has preceded it; will be a segment of time which joined to today, will be just a continuous now. "The best prophet of the future is the past."

The Homœopathy of Tomorrow, therefore, will be what it was yesterday and is today, only evolved to a higher state of perfection and a nearer fulfillment of its mission. Having had existence and a purpose in life it must run its course and complete the work whereunto it was called. What that mission was, why it was called into being, and why the furies have been unable to destroy it, is not necessary to recapitulate in detail. A short resumé will serve our purpose.

Homœopathy was born during great world turbulence. The French Revolution was in progress; American independence had just been won and the time was ripe for the great medical upheaval that Homœopathy was to inaugurate and conduct. It came at a time of utmost stagnation in medical learning when therapeutics was without chart or compass, was groping and haphazard and not much above that administered by the savage. Venesection was the first remedy in every sickness; polypharmacy had reached the limit, each massive dose containing almost everything ever known to be good for anything; mercurial medication was so general and continuous that toothless victims on that account were met at every corner; setons made pus to flow indefinitely, in order to draw out "poisonous humors;" blisterings and the red hot iron skinned their victims in order to counter-irritate them; all these and other like measures, I repeat, caused needless purgatorial suffering, that the historian may be able to outline, but never to depict in terms of actual experience.

Hahnemann's message at such a time was indeed a "gospel of good tidings," destined to transform the therapeutic world. It

*Read before the American Institute of Homœpathy, June, 1912.

was revolutionary and reconstructive and marked the beginning of a new era in medicine. It was the "new birth," since improvement in all things therapeutic began to date from that time. Henceforth, "men began to open their eyes and see;" the medical mind "seemed to gather new energies at the sight of the vast fields that opened before it" and transformation was progressive. Why Hahnemann's amendment was not immediately adopted, by a rising vote, unanimously; why his innovation was not greeted as the harbinger of the medical millenium and the gentler, more attractive and more efficacious ministrations were not embraced by all, at sight, was matter, indeed, for surprise; but was not exceptional. There have been other instances of great truth held in abeyance, notably Christianity; but there has been no depreciation of it on that account. Reformation moves slowly. All evolution is measured by the micrometer; progress being so little at a time as to be almost inappreciable.

When Hahnemann published his first deductions he had no intention of founding a school of medicine. Learned man and true physician, that he was, he offered his truth in the spirit of science, unselfishly. He desired only to benefit mankind by the diffusion of knowledge. Had his thesis been received in like spirit and his arguments been subjected to trial, either accepted or rejected according to the preponderance of evidence, as he expected would be the case, all would have been well and a century-long war would have been averted. But those pecuniarily interested took alarm, bitter opposition was launched and martyrdom for opinion's sake re-enacted.

It was expecting too much of Hahnemann, or of any man of great ability under such circumstances, to surrender tamely and quit the field. With an indwelling sense of a great truth in his keeping he felt bound by duty to preach it and to defend it. A Teuton by birth he stood by his guns. Converts gathered around him and the drill of the drug-provers began—the first of the kind in history. What power was resident in the drug as shown by its action upon the healthy, that pointed to its use in pathology, had not before been inquired into. This appealed to thinking men from the start. It was the basis for intelligent prescribing. It meant thereafter the single remedy and the minimum dose.

It was found necessary to have a flag around which the disciples could gather and under which they could fight humanity's battle. As they were called Christians first at Antioch, so they were called Homœopathists first at Leipsic. This was the birth of the school, a matter wholly of necessity; there had to be association for defense and development.

This was but yesterday; what resulted? Recruits rallied to the standard in units and platoons, till companies and regiments repro-

duced themselves in every enlightened country. And it was a notable fact that all enlistments for a half century, until the foundation of homœopathic colleges, were seceders from the opposition camp. They were men of attainment, educated in the universities; many of them had held posts of distinction in their profession, but having become dissatisfied with the ancient régime were yearning for something better. With all of them, however, it was only after rigid analysis of the new doctrine that they avowed fealty to it. Frequently their investigations were undertaken with the purpose of exposing the supposed fallacies of Homœopathy, but in the zealous pursuit of which a light was encountered, akin to that seen on the Damascus road, that completely changed the course of their lives.

But this was not the whole measure of the movement. The yeast that began to ferment in 1790 has ever continued its leavening; until it is not so much a question now, as to how many disciples there are making open profession of Homœopathy but how thoroughly the body medical is saturated with its transforming doctrine. Take note: that the lancet used with such murderous effect in the fatal blood-letting of George Washington, for simple tonsillitis, when the ink was hardly dry on Hahnemann's proclamation, was very soon forced out of use and together with other orthodox practices then in vogue, existed thenceforth only as museum relics or things to be wondered at; that lucrative polypharmacy dwindled from one hundred and sixty ingredients in a prescription to a baker's dozen or so; and later still, to just simple syrup and one, two or three; and that nauseous and repulsive concoctions met their Waterloo; inasmuch as children did not cry for them and adults refused them, they were forced to don saccharine coats and become as much like "sugar pills" as possible.

Hahnemann had "fired the shot heard round the world"; had startled sentinels on every picket and aroused to activity sleeping battalions on every field. And the change, medically speaking, measurable on every hand today, is the logical consequence thereof. For however bitter, contentious, denunciatory, malignant, sarcastic, "holier-than-thou" and aloof, were the elder cohorts in their ethics toward their homœopathic co-workers, the general transformation was being wrought, antediluvian therapeutics was undergoing reformation and more humane and scientific methods were progressively established.

In the same trend were other historic facts: Therapeutic rediscoveries were heralded from time to time, but with no sign of second hand information attached; implied new uses of remedies were announced, and names got place on the register of fame that today are not lustrous on that account; Bartholow, Phillips, Ringer, Porter, Wood, Hare, and Cushney embodied much of this in their

works on Materia Medica and Therapeutics, thus illuminating their pages immensely, and scores of their editions, thus enriched by plagiarisms from homœopathic sources, were greedily assimilated. All of which, in one respect, was not very creditable; but the world got the usufruct just the same.

What a remarkable state of affairs it was that eventuated after Hahnemann's coming; what a wonderful series of events to occur in quick succession after therapeutic immovability had persisted for thousands of years, and just when active cerebration concerning Homœopathy was in progress! What a very notable "coincidence" it was, indeed!

It was found that after all there was "something in Homœopathy;" some foundation for its growth and maintenance. After due allowance had been made for the clay in Hahnemann's make up, for the evidences of human imperfection as expressed in some of his theorizing, it was settled that Similia Similibus Curantur was a law of nature; that the animal body was affected by medicinal substances inconceivably minute and impalpable and that medical science had made great strides on that account.

It was discovered very early in the history of Homœopathy that certain products, such as the discharges from diseased tissues, the viruses and morbid sera, had medicinal power and acted in harmony with the law, Similia. These "Nosodes" as they were called, were used as remedies, with remarkable success; but were subjected to more than usual ridicule and depreciation. It is refreshing now, to find that this, also, was an extension of knowledge, as has been shown by twentieth century developments; and was the blazing of the trail along which the therapeutic highway was to be built.

Great ingenuity of explanation has failed to convince the candid mind that this is not Homœopathy; and in spite of all such arguments the homœopathic principle is again triumphant. This has been acknowledged by Von Behring, Pastuer, Wright and others, masters of the serum technique, who in the spirit of true science were only concerned for the findings of truth. The vaccines, the antitoxines, serum therapy and the salts of radium, as well as other drugs in general use, all these, change the opsonic index, stimulate phagocytosis, generate immunity and prove curatively effective in obedience to the Law of Similars. That this is distinctively homœopathic has been proven experimentally, by Wheeler, of London, with phosphorus; Watters of Boston, with the salts of potassium; Frey of Johns Hopkins, with rhus toxicodendron; Burrett of Ann Arbor, with echinacea; Dieffenbach of New York, with radium bromide; Bailey of Chicago, with radio-active substances; Runnels (Scott C.) of Indianapolis, with the oral administration of vaccines as well as

by all of our clinicians, unwittingly, for over a century in bedside practice.

The great quest in this world is to find the verities, principles that are unchanging, that have acted and will act through all time. Touching the question in hand, assurance is doubly sure, when we know that the symptoms produced by a drug upon a normal person are the same as would have been produced by it on the third day of creation, as recorded in Genesis; and that these powers resident in drug matter were meant by the Creator of the Universe, from the very beginning, to signify their uses in similar conditions engendered by disease.

The Infinitesimal Dose, so long the butt of ridicule,—are there any, now, too mean to do it reverence? Doses in millionths and billionths of a grain are found, by non-homœopathic prescribers, even, to produce "aggravations." "After giving the millionth of a milligram of tuberculin," says Trudeau, and this is assented to by Von Pirquet, Wright and others, "let the action of the remedy come to an undisputed conclusion; so long as improvement progressively advances let there be no repetition of the dose." This is very old homœopathic advice; but good as ever, nevertheless.

So it is that science brings into camp every day a new fact, or an old one verified, captured by its pickets along the line between the known and the unknown, all of which, so far as drug action is concerned, are confirmatory of the law of Hahnemann.

Men have deprecated the war that was waged on Hahnemann's truth; have regretted the unsheathed swords and the combat; but there can be no birth without travail, no sailing without wind, and no refinement without great heat. It is the method of creation, operative from the beginning; and has done Homœopathy no harm. It takes the lightning to clarify the elements, it takes the dark night to bring out the stars. And none knows this better than he who has been in the battle for principle, often against great odds, and who has been permitted to take part in the jubilation of victory.

Homœopathy sees its goal not in perfection but in progress, the invitation of tomorrow worth accepting, because of the never broken promise of yesterday. Human perfection has never been attained and never will be; it is always coming, always advancing; it is perfectibility only, that is possible. The attainment of the ideal would be the end of progress. The mind of man, once it has won its point, does not dwell there; the step it is taking is always the next step on the forward road. The law that has been operative in the past will be operative in the future, never fear; and the world will finally not dispute it. When opposition to the Law of Similars ceases, its further defense will not be necessary. When Homœopathy has completed its evangelical mission, and its reforming mes-

sage has been universally embraced, its distinction as an entity will not be called for.

But that time is not yet; homœopathic truth is still assailed both openly and covertly and ignorance concerning it is wide-spread. Advocates and teachers are needed. This is no time for repose, for dismemberment of the army, nor for capitulation. All the faint hearted, all who have wearied of the strife and the ostracism, should be permitted to retire; inasmuch as lukewarm soldiers are undependable, are apt to weaken and desert at critical moments and are never valiant. The army is stronger without them. Until the principles of Homœopathy have been adopted in good faith, universally, and all opposition is dispelled the discipline and march of the homœopathic cohorts must go on. Conquests of the new day, amplifying those of yesterday, must be made; continuity must be assured. There can be no thought of mustering out until Similia is as free from strife as is the law of gravitation or the astronomy of Copernicus.

Great work remains to be done:

First, In defining more clearly the boundaries within which Similia Similibus Curantur is supreme. This was emphasized by Hahnemann in the injunction "Remove the cause." The drug remedy is not applicable until the cause of the malady has been removed. This confines the action of medicine to its legitimate range, and defines at the same time other therapeutic measures, perhaps non-medicinal in character, that may have right of way or precedence. The claims of Physiology, Sanitation, Chemistry, Surgery, Electricity or any other measure obedient to cosmic law have priority, on occasion, as the drug has, each having indications that are distinctive. Principles can never clash and none of them have ever been worn out or superseded.

Second: In carrying to higher development our knowledge concerning the ability of drug agents. No final and complete provings of the substances used as medicines have been made. What their influence actually is upon normal individuals, as shown by modern tests, has not been adequately determined. It is necessary that this should be carefully wrought out, so that a purified and exact Materia Medica shall be our priceless possession. The wheat must be winnowed before going to the mill; all chaff must go. This work so far advanced must be carried to completion by a corps of specialized investigators. It is laboratory and experimental work that is required and the closest care and oversight is needed.

Third: The foundation and endowment of Schools of Research are thus made mandatory and homœopathic progress is dependent upon it. This will be Propagandism of the utmost value. Men must and will choose the best when they see it. All effort should be made, therefore, to support and foster our schools of learn-

ing and especially our institutions for original work; such as the Hering Memorial and the Evans Research laboratories. This is an age distinctively scientific; when knowledge must be co-ordinated, aranged and systematized; when all that is empirical or baseless as to proven fact, must lose standing and pass from view. The great work of our day is to remove all that is obscuring and to render clear the validity of the Law in all its bearings. The truth of the Law of Similars is not a matter of opinion but capable of absolute proof.

Fourth: In impressing the general profession still further with the superiority of homœopathic methods. In this age when therapeutic agnosticism is prevalent on every hand and when the highest claim to confidence of the modern practitioner is that he "gives no medicine," it is evident that great need exists for higher education. To these eminent physicians, who are thus expending their time acting merely as the supervisor of a trained nurse, Homœopathy brings the immense assistance of the intelligent and efficient use of remedial agents. The longevity of therapeutics and the perpetuity of the Healing Art can be insured in no other way.

Homœopathy is the only contribution to Therapeutics that has not contradicted itself or changed front, repeatedly, in a century. Like the Ten Commandments it stands today in its original outline, while the scrap-pile of the opposition has grown to mammoth and ever increasing proportions. So long as the chief end of the medical man is to capture an office and the political game of "grab," now in progress is unfinished, the Science of Medicine will be hampered and true progress will be more or less at a stand-still.

The Homœopathy of the Future will be the Homœopathy of the Past, continued, expanded and rounded out into harmonious relations with all correlated science. Its truth is more pertinent now than at any time in history and will be more and more compelling.

Homœopathy challenges the world as the science of the Future.

THE THEORY OF DYNAMIZATION! IS IT SCIENTIFICALLY TENABLE?*

By John Prentiss Rand, M. D., Worcester, Mass.

Ladies and Gentlemen:

It is with some degree of hesitation that I present to you this subject, for its consideration is almost sure to bring up that never settled question of dose, and if there is anything especially dear to the heart of a homœopathic physician, it is the right he has ever claimed, to administer a remedy in accordance with the dictates of his own conscience.

* Sectional Address delivered before the American Institute of Homoeopathy at Pittsburgh, Pa., June 18, 1912.

I think it is perfectly fair to assume that every physician selects the remedy and prescribes the dose which he believes will do the best for his patient. He may be mistaken in his selection, and he may give too much or too little of the indicated remedy to secure the best results; but his heart is all right; he doesn't mean to betray his patient's confidence and, whether he prescribes the tincture or the 200th, he is doing it for the patient's good.

The use of the placebo I consider as perfectly justifiable in certain cases. The patient puts himself in our hands to do what we think is best for him, and if we think a placebo is what he needs, it is our duty to give it to him. The mental attitude of our patient must be taken into consideration as truly as his physical condition, and if we think his mind will work better when he thinks he is taking medicine it ought to have the chance.

But there is something more to an ideal prescription than a dose of medicine and an expectant patient, else we should get more uniform results. Hahnemann commenced the practice of Homœopathy with material doses of crude drugs and found it was necessary to change his tactics if he would help his patients. From comparatively large doses he evolved a practical system of administering drugs in accordance with the law of similars and built up a new school of therapeutics.

"It was only in his declining years" says Dr. J. P. Dake, "when he would get away as far as possible from everything believed in and taught by his traditional opponents, that he developed the theory of infinite divisibility of drug substance or spiritual dynamization, though he himself seldom went beyond the 30th in his practice, and many of his most notable results were obtained with the very lowest attenuations."

It is certain that his success was vastly superior to that of his contemporaries whose barbarous methods of treatment lacked only the element of malefic intent to make them criminal.

That was before the general acceptance of Dalton's great law of the indivisibility of matter beyond its molecular constituents, except by chemical action which changes the relation of the atoms involved and produces a new substance. The molecule, according to Dalton, is the ultimate unit out of which the sum total of every substance is built up and the number of molecules in any given capacity is fixed and definite. It follows, then, in our method of making medical attenuation according to a fixed scale, of 1:10 for instance, that if we start out with a definite amount of any drug it must contain a definite and fixed number of molecules. Suppose, for the sake of illustration, it contains exactly 100; the 1 would then contain exactly 10, the 2 exactly 1 and the 3 would either contain the one lone molecule present in the 2 or none at all. If it con-

tained that molecule our third attempt at attenuation would leave our second unchanged and, if it did not, no medicine would be left in it. In other words, when we have attenuated a given substance to the point that only one solitary molecule is left we have reached the limit of drug attenuation.

Of late a new theory has been promulgated by Dr. Joseph J. Thomson of England which has been seized upon by certain advocates of Homœopathy to prove the reasonableness of our practice in the use of high potencies. This theory is called the Electron theory, and according to it every atom has a nucleus of positive electricity which is surrounded by a great number of smaller particles, called electrons, that are negatively charged; the mass of each electron being about 1/2000 that of the hydrogen atom. These electrons according to Dr. Thomson are the primordial substance out of which the eighty elements known to chemistry are built up, the chief difference between these elements consisting in the number of these electrons that enter into the atom that composes them, and any change in the number of these electrons produces a resulting change in nature of the whole substance. The hydrogen atom, for example, is supposed to contain 2000 of these electrons, the oxygen 32000 and the mercury 400,000.

These electrons are not distinct entities, according to Dr. Thomson, but exist only in combination as integral parts of the atom, just as atoms are united together by chemical action to form the molecule. But supposing these electrons were distinct entities, as some would have us believe, which could be transferred from the atom of the drug to the atom of the menstrum without change, the principle of ultimate indivisibility would remain the same. We have only extended the scope of Dalton's law without changing it. If we have reached the limit of molecular divisibility at the 12 attenuation, as Dr. Conrad Wesselhoeft believed and taught, under Dalton's law, we have less than six attenuations farther to go to reach the limit of electron divisibility under Thomson's theory, a difference which in some circles would hardly be considered.

Hahnemann, though a great chemist, had not the prescience to anticipate all the discoveries of modern times, and it seemed perfectly reasonable to him in his later years that a medical substance might be reduced or attenuated indefinitely. He felt and believed that the therapeutic properties of a drug, or medicinal spirit as he expressed it, were developed or liberated by his method of succussion and trituration so that he was able to secure a pure therapeutic action apart from any other drug effect. It did not occur to him in his sublime optimism that every medical substance was made up of ultimate particles-molecules or electrons—which might be separated the one from another but could not be reduced further; that

the number of these particles was fixed and definite, even though it could not be known, and unless a given attenuation contained one or more of them the resulting mass was nothing more or less than the inert menstruum with which it was made. Hahnemann could not foresee these things, and it was left for others who came after him to formulate a theory by which to explain the success of his practice with high attenuations. This theory is called the theory of dynamization, of which we shall have more to say later on.

It is perfectly easy for any of us to appreciate what the 1x, 2x, or even the 6x, attenuation means, but we have no real comprehension of magnitudes much greater than these.

In round figures every ounce of medicine contains 430 minims or grains. A single minim raised to the 6x dilution would amount to a little over 16 gallons. In other words, put one drop of an ordinary tincture into a half barrel of water and you have approximately the 6x dilution. From the 6x dilution up our volumes rapidly increase, and when we have reached the 12x our single drop of tincture has attained a bulk of 16,000,000 gallons or 500,000 barrels, and it does seem, to the mind of a materialist, that a drop of medicine diluted to that extent ought not to produce dangerous effects. But the 12x seems crude to a believer in high dilutions, and so he carries the process farther. The 30x is a favorite dilution with some and, we are told, that to make it only requires a single drop of the mother tincture and 30 vials of distilled water containing 9 drops each, to run it up with. The process is an innocent one requiring only 270 drops of water to complete it and then, when we are through, it seems as if our drop of tincture was contained somewhere among those 30 vials. So it is but the actual dilution of that drop when it has reached the 30th vial would be as one to a nonillion (1:1,000,000,000,000,000,000,000,000,000,000) drops of the menstruum, a volume of fluid that would occupy 14,781,000,000,000. cubic miles, or a sphere whose contents would be 56.85 times the size of this earth. (The volume of the earth is estimated to be 260,000,000,000 cubic miles).*

When we reach the 301c dilution which Hahnemann was wont to prescribe in his old age, the resulting mass would be as many times greater than a planet fifty-six times the size of the earth, as that planet is greater than the single drop of tincture we started with, and when we reach the 200th dilution, which is still a favorite with some, the entire space occupied by our solar system would not be big enough to hold it.

Does any sane person believe that it is necessary or possible to attenuate our drugs to that extent? And yet such things are

*These computations were furnished me through the courtesy of Clyde S. Atkinson, Ph. D., instructor in mathematics at Williams College.

taught today; more than this, we are told by a prominent advocate of high dilutions that certain patients are so sensitive that they will be made sick by the cm-potency and that a simple drop of milk potentized to a high degree and repeated beyond its homeopathicity, will establish a miasm in such patients that will last for years. Perhaps that will explain why some of our very high attenuations made with the sugar of milk become so exceedingly dangerous.

Twenty years ago Dr. Conrad Wesselhoeft undertook a series of most painstaking experiments to find out the limit at which hard or insoluble substances could be divided. He made repeated examinations with the microscope and demonstrated to his own satisfaction that not a particle of any of them could be found beyond the 12x attenuation, thus ceasing, probably, before the molecular limit, and that soluble substances which, theoretically, might be carried to the molecular limit, could not be attenuated beyond the 22x or 24x dilutions. And granting that Dr. Thomson's theory of electric particles be correct, and that a drug like mercury contains 400,000 electrons to the molecule, if molec-divisibility terminates with the 24x we could not carry the process of attenuation six places further without reaching the end of electron divisibility. In other words when we reach the 30x we have gotten beyond the possibility of drug presence.

In a recent circular issued by Boericke & Tafel the authors assert that the superior quality of their dilutions or, more properly, potencies cannot be detected by any known test save the clinical; and Dr. Lewis Sherman of Wilwaukee thirty-two years ago, demonstrated that the advocates of high potencies in this Institute could not identify the 30C dilution of a drug of their own choosing, by the clinical test or any other.

Dr. Sherman's experiment was conducted as follows: "Ten vials of like appearance were given to each prover. One of the vials contained the 30C dilution of a remedy selected by the prover with whose action he was perfectly familiar, while the remaining nine contained only the blank menstruum. Twenty-five physicians, all believers in the efficacy of high dilutions made the attempt. Out of that number at the end of a full year, sixteen made no report whatever and of the seven who did report, not *one* had been successful in picking the medicated vial from the nine blanks."

Pure luck would have given those seven men more than an even chance of drawing, at least once, the right remedy from the pharmaceutical "grab-bag," and had any one of them succeeded in doing so, his triumph would have been complete. But the Fates were unkind.

Dr. Sherman in making his report to this Institute said: "If the entire body of provers of, and healers with, dynamized medicines

cannot in the course of twelve months distinguish one of their remedies from its inert menstruum, it may reasonably be inferred that the so-called 'dynamized' drugs are not to be relied upon as medicinal agents."

Among those who accepted the challenge of Dr. Sherman and entered upon the test was the eminent Timothy Field Allen of New York, and I well remember hearing him allude to the subject in his lectures to the students.

It goes without saying that Dr. Allen was at that time the best fitted of any man living to make such an attempt, and he entered upon it with his indomitable courage and persistency. After six years of continuous effort and the utilizing of every method and device known to medicine or science in two hemispheres, he sadly and reluctantly gave it up.*

In his Presidential address before this Institute in 1885, Dr. Allen acknowledged his "complete inability to solve the problem." Among other things he said: "It is doubtless true that practically there is a limit to the divisibility of drug power associated with material substances and that this divisibility is very finite. Observations would seem to teach that in our preparations matter is not very finely divided and that the limit of fineness is reached in two or three triturations and probably in the very first dilution. The perpetuation of drug power in higher dilutions must be obtained by other methods than subdivision, and the extent and variation of this power may be the legitimate inquiry of a scientific commission. It is not a subject for clinical investigation. No facts can *ever* be demonstrated by an appeal to the sick; the elements of doubt are too numerous to be ignored, only *comparative results* may thus be obtained upon a large scale; the facts as to the existence of drug power in high dilutions are to be brought out by absolute experiment." "It seems to many of us impossible to ignore the results of high dilutions on the sick, but these apparent results must be confirmed by experiment upon the healthy and our practice made to conform to our positive knowledge."

I have quoted thus freely from Dr. Allen to show you the sane attitude of a great man and devout seeker after the truth. The subject of dynamization was one which lay very near to his heart. He was an accurate diagnostician as well as a careful prescriber, and when he claimed results from medicine he knew the natural course of a disease.

I do not think, however, in his enthusiastic study of homœopathic therapeutics, that he gave full weight to the tremendous in-

*Among the instruments employed by Dr. Allen was Prof. Jaeger's famous Chronoscope, an electric device by which he claimed to be able to detect the slightest presence of any drug.

fluence which his power of suggestion must have had upon his patients. A simple placebo from his hand had all the hidden potency of ancient magic and no one could come within the touch of his wonderful personality without being effected by it.

I come now to the original proposition of this paper. There can be no dispute among intelligent physicians about the evolution in the healing properties of a drug by a scientific method of attenuation. We all believe in the dynamization that results from the breaking up of crude drugs into their elementary constituents, but can we assent to that ultra proposition which affirms that the therapeutic properties of a drug can be communicated to an absolutely inert menstruum by the frictional contact induced by trituration or succussion, and that this process may go on indefinitely?

I have no criticism of the man who prescribes the highly attenuated remedy so long as there is some particle of that remedy present. We all believe in the potency of the small dose, of the infinitesimal dose, but that does not imply our assent to the proposition that a drop of aconite or a grain of mercury can be distributed uniformly through a mass of inert menstruum more than fifty-six times the size of this earth and retain its therapeutic properties. I have no criticism even of the man who uses a placebo in selected cases, or the very highest "potencies" of drugs to be obtained. If he believes that he can get better results from the 200x or 2000x dilution than he can from the 3x or the c-x, it is his duty to use them, but I am simply raising the question whether the cures ascribed to such attenuations or even many times to material doses of our crude drugs are not the result of the *Vis medicatrix naturae* or something else.

But I have wandered from my theme. I was speaking of the theory of dynamization and the possibility of imparting medicinal properties to an inert substance by physical contact. The proposition is undoubtedly true of certain impalpable forces in nature like electricity, magnetism and that subtle form of energy known as radium, whose real essence and composition no one as yet has fully understood. These forces are imponderable in their nature and are not governed by the laws that apply to other bodies. A dynamo is not impoverished by the amount of energy it generates, and a bit of radium will remain active for thousands of years, but this is not true of the mass of drugs that constitute our materia medica, to which this theory of dynamization is said to apply.

The theory is surely unique from a scientific standpoint. It is more than unique, for if carried to its logical conclusion it kills itself and everything connected with it.

There are about eighty elements known to exist in the physical world; from these eighty elements and their compounds every sub-

stance known to chemistry is built up. These elements have been in existence for all time, they have been successed and triturated in the great mortar of the universe since matter was created and, if this theory of dynamization as applied to our homœopathic remedies be true, every atom of matter is medicated with every other atom that exists. There is no such thing as an *inert* menstruum. Our *Aqua Pura* has run the cycle of ocean, vapor, and rainfall, millions of times and become a part of every animate body in the whole world. Our *distilled alcohol* is but a combination of carbon, oxygen, and hydrogen, that have been in existence in their elementary form for all time; and our *sugar of milk* is freshly medicated by every element in the economy of the mother that produced it.

Do you think our little homœopathic pharmacist has a monopoly of succussion and trituration? Can he transmute the inert substance he holds in his hand into medicine by the mechanical process of shaking and grinding and nothing of the kind take place elsewhere in the wide, wide world? Most assuredly not. "If this marvellous doctrine of dynamization be true; if the medical properties of one substance can be imparted to another by shaking or grinding, we eat nothing but medicine; we drink nothing but medicine; all of our baths are medicated; and with every breath, we inhale the commingled potencies of ten thousand drugs. What wonder we are smitten? Our ailments are but a gigantic exhibition of drug proving to which there is no end and from which there is no escape."

I have purposely made no mention to the fabulous potencies of Jenichen, Fincke, and Swan. The inaccuracy of them all was demonstrated long ago by the lamented Dr. Deschere who showed that the millionth potency of Swan was really about the 10-C, a potency which must surely represent some medicine and from which we should have a right to expect effect.

When we think of the miracles that are being performed around us every day by the various guilds of mental healers; when we think of the cures that have been accredited to the monstrous polypharmacy of dominant school and the equally reprehensible compounds of our own; when we think of the unknown possibilities of the *Vis Medicatrix Naturae,* we have credible evidences of therapeutic power which could reasonably account for the beneficent results of many a worthless prescription.

I am not arguing against the principles of Homœopathy or the value of medicine. I believe most heartily in both; but there is a mighty difference between a little medicine, properly applied, and no medicine whatever, and, if we pretend to give medicine at all, we ought to confine our practice to the use of attenuations that can be reasonably shown to contain it.

This does not militate in any way against our occasional use of the innocuous placebo; but remember this,—the placebo is only intended for the patient; don't try to fool yourself and the patient at the same time. If the propositions of Dalton and Thomson are true, there is an ultimate particle somewhere, molecule or electron, which cannot be divided further and beyond which it is impossible to go.

But granting for the moment that they are not true; plain reason would teach us that a drop of medicine could not be distributed through a mass of fluid the size of this earth and retain its idenity. The bloodhound will follow his scent for hours, but a little water will carry it away: A particle of musk will retain its perfume for years, but a single bureau will hold it all. There is no evidence in the physical universe to sustain our theory of high dilutions. Its acceptance involves inevitably an assent to the theory of dynamization by frictional contact, which precludes the possibility of any such thing as an inert menstruum. Our troubles are only begun. We can no longer prescribe the innocuous placebo; we can no longer prescribe the single remedy, since every placebo is medicated by contact with every medicinal substance in the world, and every drug is tainted with the medical properties of every other drug in the same way.

The theory advanced to explain the efficacy of ultra attenuations explains altogether too much and opens the door to a maze of impossible considerations. Let us be sane and modest in our professional deductions. We examine a patient; we prescribe a remedy and we *believe* that the remedy hastened the recovery of the patient, but we don't *know* it. We can't go back and repeat the experiment, and we can never duplicate the exact conditions again. The patient may have recovered without us just as quickly; he may have responded to a single placebo as well, or the whole thing may have been the result of hypnotic suggestion and mental expectancy.

This much is reasonable to contend,—that unless we can be sure that the attenuation administered contained some trace of medicinal substance we have no right to claim the cure as a result of medicine.

"A word to the wise is sufficient." The only consistent course for us as physicians to pursue is to be honest with ourselves. There is no need of resorting to doubtful prescriptions. There are at least a score of attenuations about which there can be reasonable question of drug presence and, for the sake of our own self-respect, for the sake of Homœopathy which has been caricatured in the house of its friends, and for the sake of our unsuspecting patients, let us confine our practice to the use of actual attenuations and leave the vagaries of imaginary ones to some one else.

THE CORNER-STONE OF HOMŒOPATHY.*

By Frank W. Patch, M. D., Framingham, Mass.

Recent activity in the field of medicine, especially in experimental branches, and the publicity given to all modern scientific movements by the present-day press, would seem to make this a fitting time for an examination into the tenets of the practice of homœopathic medicine as one of the branches of the great science of healing. Notwithstanding all the recent discoveries and new applications which have come into the field of empirical medicine, we can still claim Homœopathy to be the only method whereby the principles of inductive philosophy are applied to the healing of the sick. In the general medical field conditions of foundation principles may be said to be just beginning to emerge from the state existing more than a hundred years ago, in the time of Samuel Hahnemann. Technic of practice has, of course, entirely changed, and the general medical standard is far higher than at that time; but the underlying principles governing the application of drugs to the sick have until recently changed but little. In what may be termed the research field of general medicine, however, marvellous changes may be noted,—great improvement of methods in study, in the classification of results, and far more tolerance exhibited by men trained in modern methods of observation than has ever before been true of our brother practitioners as a whole. It is humiliating to confess that but little of this advance has come through the efforts of homœopathic physicians. It has largely been the result of splendidly intelligent work on the part of physiologists and laboratory students working from the old-school point of view. Yet as members of the one great body of physicians it is our privilege to congratulate these men on what they have done and what they are doing today, and to speed the time when they will reach ever higher goals than have yet been found. At the same time, while we as homœopaths have seemed to stand intrenched behind the strength of the Law of Similars, taking at times an almost supercilious attitude toward these tireless investigators, it seems to me the day has passed when we are justified in longer continuing to rely solely on the position of our forebears and the traditions inherited from the early pioneers of our art. We should do better, I am sure, to show ourselves ready to work hand in hand with all true scientists who are trying to advance the cause of the healing art, especially as the tendency of their work has now for some years been in our direction, and again, for the still more potent reason that it is our highest duty to seek only the truth as applied to medicine. We should either exert ourselves to a greater extent than has been done to prove the

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scientific basis of the principle for which we stand, or so systematize such knowledge as we have as to make it available and practicable for the use of other investigators. Homœopathy has successfully withstood the attacks of a hundred years. No one who has had opportunity to investigate fully its methods from an unprejudiced point of view, testing its practice carefully in the manner laid down by its founder, can fail to admit the justice of our claims. To attempt to sidetrack the philosophy of Homœopathy by classing it, as has recently been done, with the doctrines of Hegel, Fichte, Schelling, and other German savants of that period, would seem to me most absurd. To prove the value of Homœopathy it is necessary for one to approach the study with an open mind, with the simple desire to know the truth, and a patience in testing its value through its own well known methods over a period of years. No one who has not pursued such a course is competent to pass judgment on the worth of the homœopathic principle. That it is a principle in harmony with nature's highest laws we, who have spent our lives in proving its application, understand with a conviction that has become a part of our very being. Our duty then, at the present time, is not to give up our convictions in the face of what at first glance may seem a more attractive group of theories, but so to prove our own work and the application of our beliefs that we can invite comparison and criticism from any source whatever. Then if the homœopathic principle is true, as we believe it to be, we may welcome every advance in old-school medicine that can possibly come as being simply another step toward the final recognition of Homœopathy by every honest physician of whatever school. If our cause is tenable we can never be shaken by investigations, laboratory or otherwise, however severe. On the other hand our position will be immensely strengthened by this means.

The corner-stone on which is built the whole structure of homœopathic philosophy, and on which its practice has ever rested, is the materia medica. Without this foundation the whole of our elaborate system would immediately collapse. Consequently we see the necessity for guarding the outposts of this citadel. If the day ever comes when our homœopathic materia medica is allowed to lapse in its application, in an understanding of its principles, in the realization of what it is able to accomplish, our philosophy will fly to the four winds. Philosophy is essential to the upbuilding of an art, but in this instance the materia medica is the art itself, and by means of it we must stand or fall.

For many years the worth of our materia medica has been proven clinically by hundreds, I might almost say thousands, of physicians working in harmony all over the world. The time has come when it is necessary for us to do more than prove our position

clinically, though this may seem to be the highest form of test and one that should be satisfactory to every careful student. But this has not been sufficient to give us the recognition we should have in all places. Consequently I believe the time has come when we should seek to prove the value of our method of applying drugs purely from the laboratory standpoint, and this can undoubtedly be done. It may add nothing to our ability to heal the sick, it will add nothing to the strength of our belief in the principles for which we stand, but it will give us a prestige at the present day among scientific men that nothing else will do. Furthermore it will undoubtedly eliminate weak points in our practice and strengthen others in such a way that much good will result. Consequently I would urge that no stone be left unturned, that we should especially seek to use the facilities now at our command through the new buildings so recently erected here in Boston and devoted to research work, for this purpose. The Director of the Evans Memorial has assured me that every opportunity will be given to physicians to pursue observations in any field they may desire so long as it is in keeping with the aims of the founder. And I believe that results from this new opportunity will not be long delayed, and that we may have here a center for research that shall accomplish as much for the cause of Homœopathy as one of the means for the prevention of disease, as the centers in New York, Chicago and Boston have accomplished for the physiological side of medicine. The important thing today is that we recognize our own position, and the times in which we live, that we stand firmly for what we believe to be right, for what generations of conscientious homœopathic physicians have proven to be efficacious in the application of drugs, and not allow ourselves to give up our own distinctive methods for any less thoroughly proven. At the same time let us bring our methods and practice up to date. We now have both men and equipment for this work, and consequently we owe it to ourselves and our fellows, and to the dignity of Homœopathy to prove the value of infinitesimals by such means as will place us where we can no longer be referred to as a mere "sect" in medicine. Boston has already performed one of the finest pieces of work ever added to our materia medica in the publication of the re-proving of Belladonna under the direction of Dr. Howard P. Bellows. With the present equipment there is no reason why Boston should not go on still farther and apply modern laboratory methods to the verification of the power of drugs administered according to homœopathic principles in the treatment of disease. I do not mean to suggest by this that laboratory and physiological tests of drugs should supersede our established method of proving each drug upon the healthy individual in the ordinary method as in-

stituted by Hahnemann, but that our methods be supplemented, and the power of drugs confirmed, when possible, by all other methods. One of the greatest fallacies in the application of laboratory methods in this field by physiologists of the past, it seems to me, has been the neglect to emphasize sufficiently the law of individuality. There has been a constant effort to standardize drugs, to standardize diseases, and to standardize the human beings who suffer from disease and are to accept these drugs. Our knowledge of the importance of individuality in any attempt to overcome disease should forewarn us of this danger, for only failure can attend such effort. Human beings are not created through the methods by which watches are manufactured, and the study of materia medica is but the study of human nature in another form, and the same laws govern the individualities of the substances which go to make up our materia medica as rule the natures of human beings. Each individual must be studied by himself, each drug must be studied by itself, and the application of the drug to the individual must be made a matter of special observation. The relation between the two, the drug and the individual, is, as we know from our experience, paramount.

We believe that the chief success which can ever come from the application of drugs in an effort to heal the sick must come from the Law of Similars. Consequently it is our duty to make this belief bear fruit. A possible danger is that we lose sight of the end for which we are working in the means by which we are to accomplish desired results; in other words, we become so enamored of laboratory technic that we forget what has been done by the old-fashioned methods of proving. To be sure, this is only a possible danger, as a certain amount of the elaboration of technic will always be necessary in any laboratory study. Again, we must be careful not to be thrown off our feet by early reports of seemingly wonderful cures of various diseases, as for instance, in the matter of tuberculosis. While it is true that modern methods of dealing with tuberculosis are a great advance over what prevailed twenty-five years ago, it is not true that experience has borne out anything like the expectations that were rife in the public press a few years since. In this search for specifics that has been going on in recent years we shall find it most helpful to apply a system of reasoning similar to that used by Hahnemann before accepting in toto all that is hoped for by their sponsors. We see something lopped off the death rate in one column but if we are careful students we shall see the column of another disease creeping slowly upward, and at the end of a decade we are obliged to confess that the general mortality rate has hardly changed, and furthermore that there has been but a very trifling increase in the average length of human life. Is it not probable that this plan must go on and on for many hundreds of

years yet before the condition of the human race has reached a point that will make it possible for us to think of ourselves as making greatly important advance in the vanquishment of disease? Consequently let us proceed in our studies judicially, leaving to others any element of hysterics that is so inseparable from new discoveries at the present day. The chief point with us is that in recent years we have not seemed to have sufficient courage to hold to the principle which has served us so well, to make our efforts at progress under the laws laid down by our founder. We have been inclined to fly off at a tangent in the wake of those better qualified than ourselves in the methods we have sought to use. Had an equal amount of energy been spent upon pure research under the guidance of the Law of Similars, by this time we might have accumulated an immense advantage from the fact that we have had from the first a solid foundation on which to stand and rear a superstructure, step by step, that must have become well nigh impregnable.

What is Homœopathy? From whence did it spring? Is not its whole history a protest against the methods we are sometimes inclined to follow? How much wiser for us to continue to apply our efforts under our own laws, taking advantage at each step of all discoveries bearing upon the science we seek to interpret, and using all such adjuvants as may be made to assist us in our needs. Certainly the accomplishments of Homœopathy have been sufficient to make it worth our while to follow Hahnemann's lead. The fact that we are in the minority as to numbers need not discourage us. An impregnable position in the scientific world is more to be sought than crowds of followers. It has become a habit in certain quarters, even among our own people, to speak rather disparagingly of Homœopathy. There are reasons for this which are perfectly evident. It need trouble no one. The difficulty lies solely with ourselves. The public in the long run will judge us pretty fairly. This attitude has grown out of the progress of modern specialism in medicine, accompanying the prominence of surgery and other mechanical branches. It is but natural that members of this new school who have been interested in these branches and have perfected themselves in such practice should lose interest in materia medica. Their whole occupation is outside of the sphere of drug therapeutics, and it is impossible today for any physician to do more than attend his own immediate branch of interest. Lacking the daily exercise of the necessity for prescribing, they soon lose sight of the fact that others are still working in the field of materia medica. We should not blame them for this, for they have little opportunity to apply the materia medica, consequently its value to them as a therapeutic asset has vanished. We who are working constantly in the field of drugs are perfectly aware that drug effects are as potent to-

day as they were fifty years ago, provided the application is made with equal care and accuracy. The time has come, probably, when the study of materia medica must be looked upon as a special branch of medicine in the homœopathic field, equally with neurology, ophthalmology or surgery. Men spend their lives wholly absorbed in the study of surgical technic, pathology and the end results of disease. We honor them for it. The work they are able to do is sufficient praise for their efforts. Why should not other men, whose mental equipment leads them in an opposite direction. spend their lives in the equally ardent study of homœopathic materia medica? Does anyone think for a moment that their efforts will be less blessed than those of their brother specialists? Does anyone suppose they will be able to accomplish less for humanity than their brothers? Should they not also be accorded equal honors in the minds of others? We must have men versed in diagnostics, in physiology, in pathology and in all other branches of medicine. There is no less a growing need in this country for materia medica specialists, men who are willing to devote their lives to such study and who are capable of applying all the necessary modern tests in their work, making use of new discoveries as they arise, and otherwise keeping abreast of the times. If these facts were more generally recognized we should each have a better feeling toward others, and learn to appreciate better what they are able to do, though their work may differ from our own. The fact that surgery is one of the greatest branches of medicine does not detract in the least from the good that may be accomplished by the dermatologist or the materia medicist. Each has his own field in which he is probably able to do better work than his brother. At the same time those of us who believe in the Law of Similars should be able when occasion arises, to work hand in hand with those who do not, feeling that each has his special office to perform in the great medical body. There should be no lack of recognition for those who really accomplish worthy ends. It makes little difference to what branch of the medical body he belongs, if he can cut one single fraction of one per cent from the mortality of any given disease, he is worthy of recognition by his fellows.

There has grown up within the homœopathic school a body of remarkably skilful surgeons and mechanicians who confessedly know but little of the materia medica of Homœopathy. There has also grown up within the *old* school a body of highly trained physicians, largely alienists and neurologists, who have come to see the fallacy of large doses of crude drugs, stimulants and suppressants, which they have practically abandoned. These men have not yet reached the point where they are able to appreciate the value of the infinitesimals as we know them. They are wonderfully brilliant

men, however. No finer exist within the fold of any profession, and they will yet discover by means of their own efforts these facts which we have been familiar with for years. It is not to be expected that the rank and file of the medical profession will accept the lead of these more highly trained men for years to come. Need we be surprised that all branches of our own school are not able to agree absolutely on all points of homœopathic technic? It is little use for one to attempt to understand that homœopathic materia medica without constant and arduous study, without daily practice based upon that study which must be pursued patiently and at first with some degree of faith. We should approach this question, not with a skeptical mind but with the feeling that the work of materia medica men in the past has been as faithfully and honestly reported as the work of other specialists, that if other men have been able to accomplish certain things by the aid of homœopathic potencies we should be able to do the same things and more. What has been accomplished by one individual can be accomplished by another, provided equal care and effort are put into the operation.

Homœopathic materia medica is not a dictionary to be memorized, but an art to be understood and used in much the same manner that one uses the accumulated mass of law or mathematics. No one expects a lawyer to have at his tongue's end all the decisions of the past century, nor to be able to give expert advice off hand. The wise lawyer is the man who knows how to use the great store of knowledge at his command, just as the best prescriber under the Law of Similars is the man who is most familiar with the means of getting at the heart of his cases, who realizes most fully the immense ground which is covered by the materia medica, who is able to bring to bear a systematized knowledge of the application of drugs to sickness. All men are not suited to this work any more than all physicians are capable of being good surgeons. All men are not equally good observers in any field. The materia medica sense, if I may so call it, belongs to but few. Then again, the equipment with which physicians supply themselves is a matter of far more importance than most of us realize. The tools of the expert in materia medica are books and records. It is just as impossible for a physician to obtain a thorough comprehension of the homœopathic materia medica without an extensive reading as it is for a surgeon to perform his work without instruments. When we go into the office of a general practitioner and find in glancing over his shelves one or two small volumes on materia medica, often those that were published many years ago(though that is not necessarily a disadvantage) works that are well known to cover but a very small part of the field, one need not be surprised on hearing that physician speak disparagingly of the use of remedies. It is evident that he has had no op-

portunity to familiarize himself with the wonderful wealth of the materia medica. In his busy life other things have absorbed his attention to such an extent that there has been little time for the intimate study of cases. Or he may be a man who by nature is unfitted to become expert in this line of work. We can not expect a philosopher to be a mathematician, nor an artist to be a mechanic, neither can we expect a physician who takes no interest whatever in intimate drug nature or the careful study of human beings in their relations to one another and to their environment, to be an expert prescriber. All that we ask is that those who do not care for the study of materia medica remember the fact that there are those who do, and that it is still possible to accomplish good results with homœopathic potencies. This is only simple justice that should hold good in all relations between physicians.

The field of Homœopathy is large enough to afford ample scope for the abilities of every man, and when one finds that he can not accomplish all that he desires with his drugs, if it is a case where drugs should cure, let him seek the help of some one who is able to render assistance rather than call Homœopathy to account as being ineffective or otherwise falling short. One should realize that in order to become an expert materia medicist a physician must devote practically his whole time to this subject, and he must have an office equipment corresponding to his needs, just as is the case with any other special branch of practice. The time is long past when any one man can compass all medical knowledge within an ordinary lifetime. Likewise, the materia medica expert must himself recognize the limitations of his art. Herein lies one of the great difficulties that has met us in the past, that enthusiasts have claimed the impossible for the materia medica. They have read into cases qualities that other men could never find. They have spoken unkindly and critically of the work of those less enthusiastic than themselves, and, to my mind, they have not always been able to substantiate their claims in a practical manner. This has not been true of our really great men, the masters of prescribing who have actually been able to accomplish the remarkable things that have given Homœopathy its standing in the past, who have invariably been humble, painstaking men, always ready to go into the details of their work in the most convincing manner. Our difficulty has come from certain over-zealous practitioners with a wide but somewhat superficial understanding of their art. They have never seemed to realize fully the importance of Hahnemann's words in regard to the necessity for discriminating between curable and incurable conditions. They have not always been willing to accept the incurable. They have not always been wise in dealing with the end results of disease, (reporting) nor careful in separating mechanical from pathological states.

The consequence has been that a certain amount of opprobrium has fallen to the lot of many of the purely materia medica men, which certainly is not warranted in all instances. It is most important for the good homœopathist to be an expert diagnostician, to understand the requirements of other departments of medicine, to know what is being accomplished from year to year in the medical world. In fact, in order to be a success he must be a thoroughly well-equipped, all round, up-to-date man. No one can afford to overlook what his neighbor is doing, be he allopath or homœopath, surgeon, materia medicist or metaphysical healer. The bigger the man the more he will realize that he cannot expect to monopolize the healing art. In other words, we need a spirit of coöperation today more than ever before on account of the breaking up of medical knowledge and the broadening requirements of modern practice.

I have spoken of materia medica as the corner-stone on which the structure of Homœopathy has been built. What is this materia medica? Wherein does it differ from the materia medica of the United States Pharmacopœia? Materia medica, wherever found, is the science of drugs, their natures, sources and preparation. Homœopathic materia medica differs from that of the old school in the method of preparation of drugs and, to a certain extent, in nomenclature. The uses to which drugs are put are in some instances identical in both schools, though the form of application differs materially, and the *principles* upon which drugs are administered to the sick are entirely opposite in the two schools. That of the old school is purely empirical, while that of Homœopathy is according to the Law of Similars. Every drug before being assigned a place in the homœopathic pharmacopœia must have been proven upon the healthy individual, its symptoms recorded and verified. The Law of Similars demands that a drug to be an effective agent in the cure of disease must be able to produce upon the healthy individual symptoms similar to those which it is expected to overcome in the sick. The thorough knowledge of homœopathic materia medica implies not only a knowledge of drugs per se but also some degree of understanding of the relation existing between drugs and human individuals. In other words, a knowledge of homœopathic materia medica necessarily carries with it a knowledge of human nature as well. Great numbers of drugs have been proven and verified by clinical usage in past years, and the results of all these observations now form what is known as our materia medica. Different authors have used this great mass of material in different ways. The ten or fifteen volumes of original work have been amplified into many times that number of commentaries and other explanatory works. This unwieldy mass would be most impracticable for daily use had it not been so systematized that it is now possible to get at any portion with

little difficulty. No one can study materia medica today effectively without the use of the Repertory. The Reportory has been designed to meet the needs of the busy practitioner who has no time to pore over great tomes to discover the small portion he may need for some individual case. Repertories have become almost as numerous as the materia medicas themselves, and are equally varied in form and substance. The desideratum, however, is a simple, straightforward book that shall tell us most quickly where to find the drug we need. The Repertory, to those who are not familiar with its use, has often seemed like a mere catalogue of symptoms, and physicians depending on its use have been derisively mentioned as symptom matchers. This is due to a lack of understanding of the true office of the Repertory in the study of materia medica. It is a fact that many of the repertories on our shelves are mere symptom catalogues. As such they have only a minor value in occasional instances. Other repertories, however, have been so compiled as to make it possible through their use to make a systematic analysis of cases that would be impossible without them. It is not enough to merely cover the symptoms of any given case with a catalogue of similar symptoms taken at random from the materia medica. We must endeavor to arrive at an understanding of the so-called genius of the individual and compare it with the nature of the drug to be used, in order to make sure that our implement of cure may be sufficient to accomplish the task in hand. In other words, we are seeking not merely to cover the symptoms but mainly to discover an effective remedy to overcome disease. In order to do this, as I have said before, it is necessary for us to understand what is curable and what is incurable in disease, the normal course which certain groups of symptoms may be expected to take in the human body, whether the condition is acute, sub-acute or chronic in its nature; we must also be familiar with our drugs in order that their characteristics may be equally well understood and appreciated in every case. For instance, we should not undertake the cure of deep-seated diseases, like eczema, or psoriasis with a remedy which is only able in its pathogenesis to produce the most fleeting symptoms, such as might be found under clematis, capsicum, kalmia and remedies of that class. On the contrary we should seek a curative remedy from such a group, as graphites, calcarea, sepia, sulphur and so on. Again, we must have some idea of the proper sequence of remedies, for long-continued cases can not be cured with a single remedy. It is often necessary to use several medicines before the disease can be overcome, and here we must understand that certain remedies are more effective in a given sequence than certain other remedies. For instance, sulphur is a natural follower of nux vomica, lycopodium of calcarea, arsenicum of phosphorus, and so on. These are perhaps minor points but they are es-

sential to good work. It is just as necessary to understand that certain remedies are incompatible with other remedies, that one would not expect to get good results from causticum used immediately after phosphorus, or nitric acid after calcarea. Then, too, in the application of a remedy to an individual the similarity of the inate nature of the remedy to the especial genius of the individual must be taken into account. Many of the older warnings of the use or non-use of certain remedies for certain individuals were undoubtedly of little value. We cannot feel that pulsatilla should be used only for blondes, calcarea only for flabby individuals, nitric acid solely for brunettes, but there is, however, a homœopathicity between individuals and remedies which should be observed, though we must get at it in a different manner. We can arrive at this only through what Kent has called the generals of materia medica and what some one else has spoken of as the genius of the person in question, but I am sure you will grasp my meaning when I say that this homœopathicity is based purely on the personality of the one in question as differentiated from every other personality and corresponding to that of the drug, which, in turn is a little different from every other drug. For instance, we understand the silica type of individual to be a man or woman lacking in stamina, one who is deficient in the harder qualities of life, shown as a state of weakness, embarrassment, yielding fear, and lack of confidence in himself, though often irritable and irascible when moved to anger. Given this type of individual with a group of symptoms such as we know may be produced by silica in the proving on the healthy individual, we may expect good results. But such an individual as I have described may not always have silica symptoms, and if not there would be no use in prescribing the remedy solely from the fact that he seemed to represent that type. In other words, it is necessary not only to select the type of individual but also to make very sure that the individual has the symptoms of the drug that we would prescribe. This is what I mean by the homœopathicity existing between the drug and the human being, as well as the homeopathicity of symptomatology. From this you will understand, also, why those of us who pretend to be students of materia medica repudiate the accusation of being merely symptom mongers.

To go on, homœopaths in the past have wasted much energy in discussing minor points of their art which have little relation to the actual science itself. The potency question, for instance, is not an essential of Homœopathy. It is merely a result of the experience of individual homœopathic physicians. The essentials of Homœopathy are, 1st—The proving of drugs on the healthy; 2d,—The preparation of drugs according to the laws laid down by Hahnemann; 3d,—The application of a single remedy covering the totality of the symp-

toms, in the smallest possible dose. This is a simple code but one which many seem to find it difficult to live up to. Different remedies have proven their worth in many different potencies. The records of many physicians show results to have been accomplished of equal value in a great variety of preparations. Consequently if we are honest we must admit that the potency question should not enter into the discussion of Homœopathy. Every man should be left free to select such potencies as his experience has proven to him to be the best to accomplish the work in hand. Of certain other practices that have crept into the realm of pseudo-homœopathy one can hardly speak with too much force. Among these the alternation of remedies and the careless giving of remedies in combination may be mentioned as prominent examples. For this strikes at the root of our art. No man who appreciates the beauty and wonder of homœpathic materia medica will ever so abuse its tools. In the first place, if our work is to be of value either to ourselves, our confreres or our successors, we must keep accurate records, and accurate records are impossible where combined remedies are used, for the simple reason that the physician who uses remedies in such a manner has no knowledge of the effect that one of his drugs may have in antidoting another, nor, granting the work to be successful, has he any means of knowing whether it was accomplished by one drug or another. Consequently his records are valueless. Even the physician trained solely under empirical methods can understand this principle, and the tendency today in old-school circles is away from combined drugs toward the simplicity we would advocate. Record making may be looked upon lightly by some, but to my mind it is one of the most important functions which the physician has to perform, and the basis on which must rest all the final judgment of his work.

In summing up I would call your attention to certain essential facts closely related to the future position of homœopathic materia medica.

1st,—If it is the foundation of our art, it is our duty today to uphold its integrity; believing in its everlasting truth we are assured of its power to accomplish more in the struggle with disease within the limits of its field than any other plan that has yet been worked out.

2d,—If Homœopathy is to continue to hold the high position in the estimation of those qualified to judge that it has held in the past, it is necessary for us to make a more systematic effort than has been done in recent years to keep our materia medica abreast of modern scientific knowledge. For a hundred years we have been accumulating clinical evidence of the worth of our means of cure, but this is not enough. New methods of research have come to the front in recent years and are properly occupying a large place in the public mind and in the minds of studious physicians. We should so devel-

op our methods that we can show proof of the value of what we are doing and have done, by means of modern laboratory tests. That this can be done successfully I have not the remotest doubt, for if Homœopathy is true clinically it is true experimentally, and we must prove it so. Furthermore, it is time that we gave up any unimportant discussions in our own ranks over non-essentials. Let us realize that we have in Homœopathy a wonderful heritage, that the world is just beginning to realize the great power of infinitesimals, that there has never been such an opportunity before our school as at the present time provided we show ourselves equal to the occasion. Consequently we should center all our effort and energy around this central fact, devoting ourselves untiringly to the carrying on of the great crusade that was begun with the publication of Hahnemann's Organon so many years ago.

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M. D.

Case VIII—Diagnosis: Basler, Meningo-Encephilitis, Syphilitica.

Had we added to the description of this case that the Wasserman test was positive it would have spoiled the speculative interest in the case. Without this evidence, however, the picture is hardly to be mistaken. Still the sudden great increase in weight, with increasing heaviness of the countenance and mental clouding, certainly superficially resembled myxodema. It was not until the patient had passed through several hands and was finally given iodide of potash that the proper diagnosis was suggested.

This woman did not know that she had syphilis, but she did have a cancer on the tonsil when 33 years old. There were almost no secondary symptoms at the time, but there was a still-born child two years later. Then after an interval of nine years there began a gummation process at the base of the brain which evidently first invaded the region of the pituitary body; hence the myxodemitous symptoms. It must also have involved the olfactory bulbs, for smell was lost at this time. The dribbling of urine which occurred was undoubtedly due to the clouded mental state, for there is no evidence of any lower cord involvement. The headache attests the meningeal involvement.

This symptom is always due to meningeal and not to encephalic involvement and, as is well known, is almost a constant precursor of specific brain disease. The stagger gait suggests that there was also some pressure in the region of the vermis of the cerebellum, while the thick speech means extension of the inflammation up about the left side in Broca's area. Since we do not know what cen-

ters preside over sleep,—if, indeed, it is a local process at all,—it is not possible to say to just what the frequent drowsiness was due. But it is probable that pressure upwards upon the thalamic centers might produce this result, for we now know that the emotional life of man is here largely centered.

Then there developed ptosis of the left lid and diplopia with a right Babinsky and a suicidal tendency. It is clear that there had been a local increase in the process, therefore, on the left side at the base of the brain, which exerted pressure upon the pyramidal tract fibres before they crossed and also upon the sixth and some fibres of the seventh nerves. This suicidal tendency points to involvement of the optic thalamus which presides over the sense of reality, pleasantness and unpleasantness and the summation of whose stimuli determine the *me* from the *not-me;* that is the personality. It is the seat of the ego. (Head.)

Intellectually, the patient was not disturbed to any extent, which is another way of saying that the cortical meninges and the cerebral cortex were not involved.

The treatment is now clear. Inunctions were tried for some time with the result that the ptosis cleared up partially. Also later there have been given at the four week intervals two doses of Neo-Salvarsan (914). It is, of course, too early to speak of results, but the present progress is most gratifying.

Case IX for Diagnosis.

The patient was a young woman twenty-four years of age, of excellent family; was well up to seven years of age, when she had a severe meningitis, her life then being despaired of. On recovery she was regarded as a semi-invalid, and was indulged in every way by the family. Soon after this she showed a capricious, moody temperament with violent anger when opposed even upon trivial matters. She was sent to a private school where special consideration could be obtained for her. Menstruation appeared late, but she evinced early a fantastic, dreamy mind and a marked attraction toward the opposite sex. The tempers increased, she prevaricated and occasionally appropriated articles belonging to others. At twenty, she became involved in an unfortunate, impulsive matrimonial alliance after a week's acquaintance, but a separation was effected. She became more self indulgent and impulsive, used alcohol and cigarettes, the latter as many as a hundred and twenty a day. For this she was placed in a hospital.

Physically, she was a most attractive, pleasing young woman. She complained of occasional attacks of pain about the heart and in the right lower abdomen, and there was soreness or pressure over McBurney's point; also, attacks of more acute pain in the appen-

dicial region, with fever, when ice and rest were required for a day or two.

After futile attempts to stop the cigarettes, it was thought that if the appendix were removed, as had already been advocated by other physicians, the enforced rest and the effects of the ether would act as deterrents. Accordingly an appendectory was performed. The operation did not show the amount of involvement of the appendix expected although it was not normal. The secum was blueish and engorged. The wound healed kindly, recovery was progressing favorably and the anticipated psychic effect proved all that had been hoped for. Because of the pain about her heart, she was not allowed to sit up until the eleventh day. On that morning, she appeared and felt unusually well, and at her urgent request was allowed to sit up in a chair for a half-hour. At the end of this time, her nurse helped her to bed. As she lay down, without the least warning she stopped breathing, the lips got blue and the eyes fixed. Efforts at artificial respiration and the administration of oxygen were of no avail, and after a short, ineffectual intercostal breathing, she died.

From what was this patient suffering neurologically, and what was the immediate cause of death?

At Fordham University in New York City has just been completed the first international medical course ever given in this country. It was unique in that attention was concentrated upon only one phase of practice, that of nervous and mental diseases, and these were covered in great detail.

The first week was given to the peripheral nervous system, the second to the cord and brain, and the third to the psychæ. Drs. Henry Head and Gordon Holmes of London, C. H. Russel of Montreal, N. Achucarro of Madrid (from Alzheimer's laboratory), A. Knaner of Munich (one of Krepælin's assistants), C. G. Young, as well as Dr. W. A. White (Superintendent of the Government Hospital for the Insane, Washington, D. C.), and Drs. Jelleffe, Maloney, Walsh and others of the Faculty of Fordham Medical School all contributed to round out this many sided subject with great completeness. There were over one hundred matriculants, representing almost every State, chiefly men specializing in the subject or connected with State hospitals. They were highly pleased with the course. Encouraged by its success, Fordham intends to offer a similar symposium next year on diseases of metabolism.

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business, should be sent to the Business Manager, 422 Columbia Road, Dorchester, Boston, Mass.

The GAZETTE does not hold itself responsible for the opinions expressed by its contributors.

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"It is not all of life to live, nor all of death to die." Living is existing, but simple existence is not living in the full sense. It is not how *long* a man lives, but how *well* he lives. Dr. Maurice H. Richardson lived much in that his accomplishments far exceeded at 60 years those of most men who have been allotted twenty years more to their lives. His life as a physician could in many respects be taken as a model for the young physician to copy. Much more is to be learned by the embodiment of practical qualities in one concrete instance than by a volume of abstract teachings. When the young physician asks, "What are the essential qualities which contribute to the successful physician?" let him find his own answer by looking about him and analyzing those lives which at their termination have shown the full fruitage of a ripe harvest.

Dr. Richardson was an indefatigable worker. Success is not a child of luck but of labor. Few men, however willing, have the capacity for such labor as Dr. Richardson performed throughout his life. Moreover he was an industrious worker. His efforts were directed in a line to bring results. Many men are ever busy but rarely industrious,—busy in the unessentials of life, spending time picking up pins which could be bought at less effort, or fighting wind mills.

If the recording angel made prominent one quality of Dr. Richardson's character more than another it must have been this, "He loved his fellow men." We get in this world pretty largely what we give, and he gave such a large measure of whole-hearted personal service to all whom he could in any way serve that a rich return of genuine personal love was his by right of exchange. When a man gives himself he gives the best he has. This giving was evidenced by his successful teaching, his operating, his writings and in his personal contact with his fellow physicians, especially with the younger men. His optimism gave him faith in men and things, and without such faith few men have the courage to work whole-souled for the accomplishment of their ideals.

PUBLIC HEALTH AND THE PARTY PLATFORM.

The progressive physicians of this country of whatever school have put themselves on record as advocating a Federal Public Health Service which shall co-ordinate the various existing public health and medical activities of the National Government (except the department of the army and navy) into a single independent establishment concerned only with hygiene, sanitation, and statistical matters connected therewith but having no control over, or connection with, medical education or medical practice.

That such a measure is a vital interest to the public physical welfare is evidenced by the disgraceful tactics of the head of the Bureau of Agriculture in thwarting the wish of the people in their desire to secure pure food, reliable drugs, and the annihilation of dangerous and useless nostrums.

It would seem that the recent spectacle of "how not to do it" in this aforesaid Bureau of Agriculture would be sufficient to call attention of the platform makers of all parties to the necessity of some provision against its repetition. The Republican platform has not a word to say on the subject. The Democratic platform makes it a strong plank in no uncertain words.

In our desire to see the New Progressive Party declare itself upon this matter we wrote the framers of the platform urging a declaration favoring the establishment of such a health service. It is therefore with much pleasure that we quote the following words of Roosevelt when he made his Chicago speech setting forth the "Declaration of Faith" of the Progressive Party,—

"No people are more vitally interested than working men and women in questions affecting the public health. The pure food law must be strengthened and efficiency enforced. In the national government one department should be intrusted with all the agencies relating to the public health, from the enforcement of the pure food law to the administration of quarantine. This department, through its special health service, would co-operate intelligently with the various state and municipal bodies established for the same end. There would be no discrimination against or for any one set of therapeutic methods, against or for any one school of medicine or system of healing; the aim would be merely to secure under one administrative body efficient sanitary regulation in the interest of the people as a whole."

That language is so plain (as Roosevelt's language generally is) that even the most timid calamity howlers on "Medical Rights" need not lie awake nights with the fear of an impending medical starvation if such a service is to be established.

BOOK REVIEWS.

Pellagra. History, Distribution, Diagnosis, Prognosis, Treatment, Etiology. By Stewart R. Roberts, S. M., M. D. Associate Professor of the Principles and Practice of Medicine, Atlanta College of Physicians and Surgeons; Physician to the Wesley Memorial Hospital; Formerly Professor of Biology in Emory College. With eighty-nine special engravings and colored frontispiece. Price $2.50. C. V. Mosby Company, St. Louis. 1912.

Pellagra is one of the latest old world diseases to develop in this country thereby challenging physicians and scientists to attempt its study. For some little time now we have wished for a work that would give clearly the essential, known manifestations of the disease, not discursive yet full enough to present adequately the facts and theories as we know them to-day. Dr. Roberts' book meets a long-felt want and, as far as we are capable of judging,—it is the best treatise in the English language upon this interesting disease. The book is thoroughly readable throughout, written in the scientific spirit, and well illustrated.

The author defines pellagra as a general disease characterized by a series of symptoms involving chiefly the digestive, cutaneous and nervous systems. A generous share of space is devoted to general considerations, history, geographical distribution and classification of the disease. Following these subjects he considers in very definite language the symptoms of the alimentary, skin and nervous systems, the symptoms found in the circulatory and other systems of the body, the diagnosis, prognosis, and treatment of the disease.

The one best drug for the alleviation and cure of pellagra is arsenic used in the form of Fowler's Solution, cacodylate of sodium, atoxyl, soamin. Anyone who will take the trouble to compare the symptomatology of pellagra and the provings of arsenicum album will not lack for a reason for the efficacy of arsenic in any form in this disease.

The last section of the book is given up to a consideration of the three theories of causation of the disease. In continental Europe the common people for a long time have ascribed its cause to the consumption of spoiled maize. This theory is also held by the physicians of Italy and probably by a majority of the physicians of the Southern States. But the adherents of the corn theory have not made out their case in one hundred years. This theory is the easiest to believe, but there are facts opposed to it which will not permit us to accept it in the scientific sense. The other two theories held at the present time is that pellagra is either an infection or an intoxication, the actual cause of which is unknown. Dr. Roberts is inclined to believe the disease an infection.

Although the greatest number of cases of pellagra are at present in our Southern States, in the country districts and not in the larger centers of population, still the occurrence of sporadic cases in seventeen Northern States makes this disease of interest to every physician. Such will find this work of Dr. Roberts profitable and interesting reading.

Lateral Curvature of the Spine and Round Shoulders—Lovett. P. Blakiston's Son & Co.

The second edition of this excellent work has the same clear and exhaustive treatment of scoliosis and round shoulders that characterized the first edition. The normal and pathological curves are clearly described. The various theories of etiology are interestingly set forth. Careful attention is given to the various methods of examination and the recording of cases.

More space is devoted to the relation of scoliosis to school life, new methods of gymnastic, mechanical and jacket treatment are described. The book is well illustrated by photographs, X-ray models and patients. This second edition is the most exhaustive study of these conditions in English, and should be studied by all practitioners and medical students.

The Key to Sex Control, or the Cellular Determination of Sex and the Physiological Laws which Govern its Control. By Percy John McElrath, M. D., New York City. Published by the author.

The work shows a deal of careful research and exhaustive study into the

physiological and biological laws of animal and vegetable reproduction. He believes that the axiom, "The Universe is governed by law," is applicable to everything in the universe, but particularly so to the complex phenomena of the minute cells which combine to form the bodies of men and animals. The while he does not claim that sex control can be made absolute, yet he does assert that sex can be predetermined in a majority of cases of animals, birds, fishes and reptiles. The control is based upon the understanding of what he calls, "maternal and paternal secondary laws." One of these laws is this: "In the normal woman the follicle matures ready for rupture and extrusion midway between the last day of one menstruation and the first day of a succeeding one." Therefore, to beget males, insemination should take place fifteen days following the last day of the menstrual period, and the female orgasm should cause the follicle to rupture and the ovum to be extruded. The vesiculæ seminales should have been emptied daily for three days prior to insemination. To beget females, insemination should take place immediately following or just prior to menstruation, or if at other times there should be no orgasm of the female to rupture the follicle. The spermatozoa should have remained in the vesiculæ seminales at least one week. The author gives a number of examples to prove his theory, but we must confess that however fine his theory he has fallen far short of proving his case. When sex control is given over entirely to the whim of the human mind the fine numerical balance of the sexes which has been maintained since the world began is quite likely to be upset. His law is this: "Nature has designated that rupture of the Graafian follicle should take place at the moment of the female orgasm during coition." Upon this law he bases his sex-control theory. His paternal laws are similar to the maternal, with this exception— the length of time which the spermatozoa have remained in the vesiculæ seminales. The longer they remain there the older and less vigorous they become, and for that reason more likely to produce a female. The shorter time they remain there the more vigorous they are. The vigorous spermatozoa penetrating a newly extruded ovum will produce a male; old or weakened spermatozoa penetrating an old or remotely extruded ovum will produce a female.

Compend of Regional Diagnosis—in affections of the Brain and Spinal Cord. A concise introduction to the principles of clinical localization in disease and injuries of the central nervous system. By Robert Bing, Prevot-Docent for neurology in the University of Basle, translated by F. S. Arnold, B. A. M. B. B. Ch. (Oxon) Revised by David Wolfstein. Published by Rebman Co., 1123 Broadway, N. Y. Price $2.50.

This is a concise work written in the didactic form and because of that fact a practical vade-mecum for the operating surgeon, the neurologist, the advanced diagnostician and the anatomist. The book is an outgrowth of the post-graduate lecture given by the author in his clinic at Basle. While the subject of brain localization is far from being accurate or complete. yet the painstaking work which is being given the subject by such men as Bing, Balance, Horsely, Cushing and others must of necessity reduce this intricate subject to one of workable accuracy. The neurologist and the neurologic surgeon recognize fully that without a well grounded knowledge of such facts as are established in regional diagnosis he is far at sea without chart or compass. Dr. Bing's work is certainly helpful in that it is as accurate as it is possible to make such a work with our present knowledge. Being well indexed, the subject matter is available for quick reference. The illustrations are good and add materially to the descriptive matter.

Journal of the American Institute of Homœopathy, September 1912.

The Present Trend and Purport of Scientific Medicine. Along Lines of Research and Prevention. Illustrated by Proposed Work in the Evans Memorial Department of Clinical Research and Preventive Medicine, Mass. Homœopathic Hospital. Richardson, Frank C.

Vitex Trifolia or Tudian Arnica. Kali, C. S.
A Knowledge of Homœopathic Materia Medica to the Intelligent Practice of Medicine. Price, E. C.
Massage vs. Vibration. Smith, A. E.
Salvarsan Heresies. Scharff, P.
The author considers it a valuable new remedy against lues, but that it is neither a sovereign nor an unconditionally harmless one. He does not believe that it acts as a bactericide, but holds that, similar to all other nati-leutic remedies, it manifests its specific curing power by produring a hyperleukocytosis in a catalytic manner by stimulating the production of antitoxins
The Treatment of Nervous and Mental Diseases by Occupational Methods. Everett, E. A.
Homœopathy without Defilements. Fisher, C. E.
Experience with Vanadium in Tuberculosis. Harpel, W. F.

The Clinique. September 1912.

1. *Mendel's Law. Is it practicable in Child Culture as in Agriculture?* Gordon, A. H.
In regard to immigration the author says: "A remedy has been suggested by the eugenists, viz., an investigation of the immigrants' families in the countries from which they come. This would seem to be an almost impossible task, but in analysis it is not as impractical as a cursory consideration of it would indicate. From the financial standpoint it can easily be demonstrated to be the most economical after a few years have elapsed.
2. *A Case of Chronic Appendicitis simulating Gastric Ulcer.* Wood T. C.
3. *How to Study and Apply the Materia Medica. Hydrastis Canadensis.* Baemeister, T. Jr.
An alluring title to a brilliant, oratorical discourse in defense of Homœopathy. The paper is amusingly characterized by the absence of any consideration of the title.
4. *Treatment of Typhoid and Paratyphoid Fever.*—Butler, Alice.
A very brief and clumsy review of the subject, marked by the lack of any scholastic attempt to deal with the subject.
5. *Surgical Technique.* Houston, G.
6. *Elephantiasis—Report of a Case.* Starr, N.
Treatment not Considered.
7. *Routine Methods and Technique of Physical Diagnosis.* Hinsdale, W. B.

The University Homœopathic Observer. October 1912.

1. *Routine Methods and Technique of Physical Diagnosis.* Hinsdale, W. R.
Discussion by Dr. Laidlaw.
2. *Does Internal Medical Influence the growth of tumors?* Smith, D. T.
The author qualifies in answer to the affirmative. The author considers 3 classes of tumors. (1.) Tumors, using the word in the narrow technical sense of the pathologist. (2) Adenomatous or glandular conditions. (3.) Growths of known or accepted bacterial origin. That Sarcomas and Carcinomas may be influenced by such drugs as Ars., Conium, and Radium should be inferred from clinical evidence but too much reliance must not be placed upon them. Adenomas commonly subside under Spongia, Iodine, Hecla lava, Baryta Carb., and other remedies. Growths of bacterial origin are undoubtedly benefited by drugs. The best example is the syphilitic gumma.
3. *Subphrenic Abscess.* Mellon, R. R. C. W.

The Homœopathic World. (London) October 1912.

1. *Comments of a Spectator on Homœopathy.* Turner, J.
The author, a scientist, takes up the subject in a disinterested way, approving of the logic of homœopathy. He suggests that we call the law of similars an hypothesis since it has not yet been explained but remains a detached truth. He refers us to the work of Prof. Loeb on "Dynamics of Living Matter" which deals with many things which will

help us in our task of explaining the action of drugs given according to our hypotheses. He urges us to seek an explanation of our cures with the following words: "Mere successful prescribing cannot be the ultimate goal of any serious-minded body of physicians . . . . Either you must push forward that wing of your forces which is equipped for penetrating into the mysterious regions of Nature which adjoins your field of work and which are still unexplored, or your right wing, your merely benign workers of cures, will be hopelessly thinned, because you will be unable to secure the best class of recruits in this period of the world's history, which insists from the first to last—whether rightly or wrongly—upon knowledge! C. W.

North American Journal of Homœopathy. September 1912.

Homœopathic Therapeutics. Blackmore, R.

A consideration of the application of the fundaments of homœopathic therapeutics with an appeal for "stronger unity on the part of homœopaths, a stronger manifestation of tolerance and cooperation in, and fidelity to Hahnemannian laws.

An unusual case of Pneumonia. Cornell, V. A. H.

A case of "pseudo-lobar broncho-pneumonia" affecting the entire right lung in a boy of two and one-half years. On the fifth day allopathic consultants of the unadulterated true allopathic type were called in with the result that the patient was first alternately and later simultaneously "stimulated" and depressed until death was brought about on the sixteenth day. We feel that an autopsy by a competant toxicologist might have offered a more justifiable cause of death than the diagnosis given by the pathologist.

Phenomena underlying the cure of infectious diseases. Watters, W. H.

The author takes up the modern methods of combating infection as classified by Wright; viz: (1.) Treatment by chemical antiseptics. (2.) Treatment by extirpation of the infected focus. (3.) Treatment by determination of lymph to the infected focus. (4.) Serum therapy. (5.) Expectant therapy. He then goes on to discuss inoculation, "experimental inoculation," *i. e.,* inoculation by measured doses, and its relation to Homœopathy.

Practical Primary Materia Medica. Seibert, W. L.

Chlorine Treatment of Sewage. Corson, A.

The Ten Commandments for Handling Sewage Without Nuisance. Hall, P. M.

Treatment of an Unusual Case of Typhoid Fever by Vaccine Method. Smith, E. S.

The Pacific Coast Journal of Homœopathy. August-September 1912.

1. *Clinical Study and Therapeutics of Hypertension.* Tomlinson, R. F.
2. *The Etiology of Arteriosclerosis.* Bishop, H. F.
3. *Pathology of Arteriosclerosis.* Barnard, F. S.
4. *Pathology.* Boolsen, S.
5. *Beri-Beri,* Case, L. H.

1. *Pathology of Malaria.* Loizeaux, E. S.
   A very brief consideration from a meagre bibliography.
2. *Homœopathic Remedies in Surgery.* Barnard, F. S.
3. *Epithelioma of the Tongue.* Guild, W. A.
4. *A Scientific Basis for the Materia Medica.* Rice, P.
5. *How the Health Officer sees Santa Clara County.* Simpson, Wm.
6. *Poliomyelitis-Infantile Paralysis.* Hawkes, W. J.

The Medical Advance. September 1912.

1. *Treatment of Dysmenorrhea.* Saunders, J. C.
2. *The Scope of the Homœopathic Drug.* Freeman, W. H.
3. *Modern Physiology.* Richberg, E. O.
4. *Cured Cases Verifying the Complementary Relationship of Remedies.* Henderson, S. J.

Iowa Homœopathic Journal. August 1912.

1. *Pneumonia.* Stoaks, F. E.
2. *Poisons and Medical Maladies.* Wells, Myrta A.
   Suggestions for antidoting poisons in severe cases of poisoning.
3. *The General Practitioner and Skin Diseases.* Loireaux, C. J.

Surgery, Gynecology and Obstetrics. September 1912.

1. *Results of the Permanent Intubation of the Thoracic Aorta.* Alexis Carrel, M. D.
   This article describes experiments upon dogs which show what can be done for aneurysm in a large blood vessel by inserting glass and aluminum tubes. The experiments demonstrated that the arterial blood flowed through a glass tube nine or ten millimeters in diameter during periods varying from five to ninety-seven days. No deposit of fibrin on the wall of the tube occurred. The permanent intubation of a large artery is a simple operation. It may become practical if the shape and nature of the tubes be modified in such a manner as to prevent laceration of the aortic wall. It is probable that the use of smooth-edged gold tubes, or tubes lined with a vein, will be followed by better results. The question of the application of this method to human surgery will then, possibly, be considered.
2. *Central Dislocation of the Femur.* George T. Vaughan, M. D.
3. *Treatment of Ununited Fracture.* Edward Martin, M. D.
   It is commonly accepted to-day that, given a clean surgeon and a proper equipment, all accessible fractures in which the broken ends of bones cannot be placed and retained in position as to insure reasonable function and the absence of gross deformity, should be promptly subjected to open operation; that all fractures of long bones in which, after apparent satisfactory reduction, crepitus cannot be elicited, should be examined through an incision and secured in position after removal of interposing soft parts; that compound fractures should as a rule be opened, cleansed and neatly opposed with some retentive appliance and, finally that ununited and viciously united fractures of long standing should be subject to operative treatment without previous trial of conservative methods.
   The disadvantages of the open method of fracture treatment are that it is at times attended by pronounced shock and bleeding; that the utmost care may fail to insure against immediate or remote infection; that union is delayed, at times failing entirely.
4. *A Case of Non-Traumatic Diaphragmatic Hernia. Operation; Recovery.* C. L. Scudder, M. D., Boston.
   An interesting and rare case subjected to operation, using intratracheal anæsthesia. The article is profusely and well illustrated.
5. *Complete obstruction of the Duodenum Resulting from the Impaction of a Large Gall-Stone.* James E. Thompson, F. R. C. S. (Eng.) Galveston, Texas.
6. *Lever Action in the Production of Traumatic Dislocation.* G. G. Davis, M. D., Philadelphia.
7. *Talma Operation for Cirrhosis of the Liver.* E. A. Vander Veer, Albany, N. Y.
   The technique of the Talma operation was to open the abdomen between the umbilicus and ensiform cartilage and suture the omentum to the opposed parietal wall, at the same time freshening by vigorous gauze rubbing the anterior surfaces of the liver and spleen. The author believes this rubbing to be dangerous, as it interferes with the structure of the organs and does more harm than good. The modifications of the Talma operation as practised by Narath and Mayo are given. The author is inclined to make his incision in the median line between the umbilicus and symphysis pubis, extending his incision upward if necessary. He insists on a general anæsthetic and believes that the distressing symptom of ascites of the liver can be greatly helped, if not cured, by operation. The earlier the patient comes to the surgeon the better the result. In conclusion the author says that he believes that the operation of omentopexy is a justifiable one and that the ideal technique

is, under general anæsthesia, a median incision below the umbilicus, suturing as much of the omentum to the abdominal wall as possible; and, above all, drainage for at least a week. This latter feature he believes to be especially esential.

8. *Nitrous Oxide-Oxygen-Ether Anæsthsia: Notes on Administration; A Perfected Apparatus.* Frederick J. Cotton, A.M., M.D., and Walter M. Boothby, A. M., M. D., Boston.

A very excellent contribution to the subject of the newer anæsthesia. The requirements of an apparatus to induce anæsthesia by this method are as follows: 1. Absolutely regular flow of each gas without undue valve regulation. 2. The flow of the gases must be made visible so that their proportions can be estimated at a glance. 3. An efficient method of adding ether vapor from the smallest to the larger amounts needed. 4. The face piece must be air-tight and self-retaining. In the ingenious apparatus described in this article the first requirement is obtained by using automatic reducing valves, the second, by having the gases bubble through water separately into a glass mixing chamber; the third requirement is met by providing a chamber filled partially with ether and by means of a three-way valve placed between the mixing chamber and the ether chamber the gases may be made to pass around the ether chamber, thus furnishing no ether in the mixture, or partially or wholly over the surface of the ether, thus giving small amounts of ether vapor, or the gases may be made to bubble through the ether chamber, thus giving the larger amounts of ether; the fourth requirement is met by a face-piece which is air-tight and practically self-retaining. Warning is given that under this form of anæsthesia the patient must never be blue but pink. Even with the patient pink a dangerous amount of nitrous oxide may be given. The warning of this is first, stertorous breathing and the onset of excessive secretion of mucus, later the breathing becomes shallow, a pallor of the face appears and if the condition is allowed to go on would end by paralysis of the respiratory centre possibly. The authors believe that nitrous-oxide-oxygen anæsthesia is safe in expert hands, possessing advantages over straight ether anæsthesia.

9. *The Results of the Routine Treatment of Structural Lateral Curvature by Means of Plaster Jackets.* James Warren Sever, M. D., Boston.

An excellent article on the efficiency of this work of treatment in various forms of scoliosis.

The Journal of Opthalmology, Otology and Laryngology, July 1912.

Presidential Address for 1912.—G. A. Suffa, M. D., Boston, Mass.

"My theme, in addressing you today, will be fourfold. First, I shall call your attention to the fact that the trend of the practice of medicine today is largely social, through public measures for the prevention of disease rather than individually curative; that this impulse is rapidly becoming dominant, and that the practice of medicine, especially diagnostically, is rapidly being placed on a firm scientific basis by means of liberally endowed research work, principally in the regular school. Secondly, that strenuous efforts are being made by the regular school to place therapeutic measures on this same firm scientific foundation, that "drugging" is being done away with, and that therefore our school can not rest in false security upon the investigation of a bygone century while others are searching honestly and diligently for the light of truth. Thirdly, that the movement for scientific methods in the prevention and treatment of disease will work marked changes in the future for medical practice in its various phases, including medical education. Fourthly, that we should advocate a national standard for the control of medical education and establish a nationl beneficiary medical institute for original research which will not only benefit the profession, but do important service for humanity."

The Journal of Opthalmology, Otology and Laryngology, August 1912.

Dr. W. H. Crisp, Denver, Col., "Use of Cycloplegics".

"Enterprising opticians have recently left from house to house in Den-

ver a folder which asserts that the use of cycloplegics is unnecessary in the measurement of refraction. To the initiated this is, of course, an instance of "sour grapes." It would be illegal for these gentlemen to use cycloplegics or "drops;" hence they assure us that oculists who use drops are inflicting unnecessary inconvenience on their patients. Even in the hands of the most careful and expert refractionists, there are many cases in which a proper estimation of the patient's refractive condition is impossible without the use of a cycloplegic. There are many other cases in which, far from causing inconvenience to the patient, the use of the drops really means a saving of the patient's time and energy, as well as those of the physician; and further renders the result much more reliable. In many strained eyes, also, the rest obtained during the enforced relaxation of the ciliary muscle is distinctly beneficial."

Just Published, the Fifth Edition of Boericke's Materia Medica, with Repertory re-written, enlarged, and with the addition of all new remedies introduced since the last edition, such as Radium, X-Rays, Lecithin, Thymol, Justicia, &c.

The only book that contains all the characteristic and verified symptoms of the Homœopathic Materia Medica.

The profession will be glad to know of the appearance of this new edition of Boericke's well known book that has done more to facilitate accurate homœopathic prescribing for the busy practitioner than any other book published. The practical and excellently arranged *Repertory* and the addition of a *Clinical Index* for quick reference furnish ready suggestions for the indicated remedy in any case and help to make the *Homœopathic Materia Medica* what it is intended to be—the greatest aid to the practising physician.

Sample pages mailed on request by the publishers, Boericke & Runyon, 14 West 38th Street, New York City.

PERSONAL AND GENERAL ITEMS.

PRACTICE WANTED.—A recent graduate of Boston University School of Medicine wishes to purchase, at a reasonable price, a good homœopathic medical practice in Massachusetts. Address "L. E. D.," care *New England Medical Gazette,* 422 Columbia Road, Boston, Mass.

Dr. Marion Shepard, of the 1912 graduating class of B. U. S. M., has located at 22 Howard St., Springfield, Mass.

Dr. Edmund H. Packer, for many years in practice in Lowell, Massachusetts, died on October 10.

Dr. N. W. Emerson has relinquished all financial and business interest in the Emerson Hospital, Forest Hills, to his assistants, who will adhere to the policy inaugurated by him and under which the Hospital has been so successful in the past. Dr. Emerson, however, retains his professional interest and will continue to operate at the Hospital as heretofore.

The Grand Council of Alpha Sigma Fraternity meets with Delta Chapter this year. The dates of the Council include November 26 and 27, 1912.

Drs. Ruth Barker Coles and William W. Coles, formerly Assistant Physicians at Westborough State Hospital, have opened a sanatorium for mental, nervous, and selected medical cases at Keene, New Hampshire. They are meeting with well-deserved success in their undertaking.

FOR SALE.—A limited number of the special Psychiatry number of the *New England Medical Gazette,* September 1912, are for sale at one dollar per copy. Address Business Manager, 80 East Concord St., Boston, Mass.

Southington, Connecticut, is reported to offer an excellent location for a homœopathic physician, and F. C. Williams of that town has a physician's suite of four rooms to rent. It is a corner location, ground floor, two entrances, rooms large and light. Address F. C. Williams, Southington, Connecticut.

Dr. Frank W. Patch of Framingham, Mass., Professor of Materia Medica in Boston University School of Medicine, delivered the address at the Waltham Training School for Nurses' graduation exercises on September 27.

Dr. J. Emmons Briggs returned to Boston on October 6 from a two months' vacation in Europe with Mrs. Briggs.

FOR RENT.—Office of a Back Bay physician to be let for a part of the day. Furnished, excellent service, stenographer, telephone. Apply to Secretary, Medical School office, 80 East Concord St.

PHYSICIAN WANTED.—There is an opening for a male physician on the staff of the Westborough State Hospital. Salary dependent upon experience in similar lines of work. Apply to H. O. Spalding, M. D., Supt. Westborough State Hospital, Westborough Mass.

Dr. W. Alvah Stewart of Pittsburgh, Pa., and Dr. D. P. Maddux of Chester, Pa., have been appointed to membership on the Pennsylvania State Board of Medical Education and Licensure. Dr. Stewart succeeds Dr. C. P. Seip of Pittsburgh, deceased.

The Woman's Southern Homœopathic Hospital was officially opened for patients on July 20, in its new building at Broad and Fitzwater Streets, Philadelphia. This Hospital is the outgrowth of a dispensary which was opened in 1893 by Dr. Amelia Hess and Miss Anna M. Miller. Dr. Hess is now vice-president, and Dr. Mary Branson president.

Dr. Roscoe L. Perkins, of Harrisburgh, Pa., son of Dr. N. R. Perkins of Dorchester, was one of twenty out of the nine hundred and seventy-one candidates examined by the Pennsylvania Homœopathic Board of Registration in Medicine, during its seventeen years of existence, whose average in examination was above 95 per cent. and Dr. Perkins' name stood almost at the head of this list of twenty.

Boston University Medical Library has recently received several files of medical journals through the courtesy of the Mellins Food Company.

Dr. Anna T. Lovering, librarian of the B. U. S. M., 80 East Concord Street, Boston, has resumed literary work, and will be glad to assist physicians in the preparation of medical papers.

Dr. Clara Barrus, class of '88 B. U. S. M., has removed from Seattle, Washington, to 424 Seventh Avenue, Pelham, New York.

Dr. A. George Gigger, class of 1906 B. U. S. M., has removed from Abington, Mass., to Chatham, Mass.

Dr. Donald S. Hepburn, of the 1912 graduating class of B. U. S. M., has opened an office at 897 Broadway, Somerville.

Dr. E. D. Lane, of the same class, has located at 38 Main St., Andover, Mass.

Dr. Virginia Tenney Smith B. U. S. M., 1888, of Los Angeles, California, expects to be in the East for the next two or three years, and has located temporarily at 1100 Beacon St. Brookline.

CHAUFFEUR'S COMPLETE OUTFIT SACRIFICED.—Consisting of elegant Mink fur-lined coat, Persian lamb collar $35, pair of elegant bear robes $15 each, Raccoon cap $5, pair of fur gloves $4, pair of goggles 50 c, 1 pair leather leggings $3.50. Will sell separately or the lot, all new, never worn; original price $225.
C. Chase,
East 28th St., New York.

Boston University School of Medicine was invited to make a pathological exhibit at the International Congress of Hygiene and Demography held in Washington during the latter half of September. This was the only pathological exhibit asked for.

FOR SALE.—A portrait of Samuel Hahnemann, painted from life in 1840. Property of the late Dr. Dudgeon of London, England. Can be seen by appointment at 33 Angell St., Dorchester. Telephone, Dorchester 1244-4.

An elderly lady or semi-invalid wishing to be with private Protestant family in a refined home with cheerful and sunny surroundings can be accommodated at 33 Angell St., near Franklin Park, Dorchester. Diet list followed if desired. References: Dr. Wm. E. Fay, 366 Commonwealth Avenue. Mrs. J. L. Grandin, 461 Commonwealth Avenue, Boston. Telephone, Dorchester 1244-4.

Letter from Dr. W. H. Watters.

To the Readers of the *New England Medical Gazette*:—About six years ago the writer began to use vaccines in the treatment of typhoid fever. Since that time he has thus treated more than one hundred cases and has collected numerous articles upon the same subject written by physicians in various parts of the world. It seems possible, however, that some may have escaped notice. He also realizes that many of the profession may have treated some cases without reporting them. A paper upon the subject is now in the course of preparation. In this it is earnestly desired to incorporate reports from a large number of cases, good, bad, and otherwise. He accordingly makes the following request to the readers of this journal:

Will any one who has used vaccines in the treatment of typhoid fever, whether but one case or more, kindly communicate to him that fact accompanied by name and address of the reporter. If the results have already been reported, a note of the journal in which they appeared will be sufficient. If they have not been reported, a short blank form will be sent to the physician to be filled out. Due credit will be given in the article to each person making a report. If any physician happens to know of others who have any such cases, it will be appreciated if he sends their names, as they may not happen to read this note. It is hoped that by this means a sufficient number of cases may be collected to somewhat definitely settle the now mooted question whether vaccines are or are not of benefit in typhoid therapy.

Reports of cases will be accepted at any time in the future, but preferably by November or December of the present year.

Kindly communicate with Dr. W. H. Watters, Director of the Department of Pathology and Bacteriology, Evans Department for Clinical Research, East Concord St., Boston, Mass.

In order further to popularize the demand for BACTERINS— (Bacterial Vaccines), and enable physicians to make more general use of these products, we call attention to the downward revision of prices on Mulford Bacterins, effective August 5th.

The Mulford Bacterins are in every case "polyvalent," which means that the bacteria contained in a Bacterin, although of the same species, are obtained from many different sources. For instance, Strepto-Bacterin is polyvalent, the bacteria used for its preparation are all streptococci and are isolated from different patients suffering with streptococcic infections among which may be mentioned puerperal sepsis, general septicemia, erysipelas, tonsillitis, empyema, cellulitis, etc.

A number of the Mulford Bacterins are "mixed" by which is meant that they contain the various bacterial species generally present in a mixed infection. For instance, the mixed Vaccine of chronic gonorrheal infections, besides the gonococcus contains various staphylocci, colon bacilli, streptococci, and other organisms isolated from cases of chronic urethritis and prostatitis.

In some cases, diseases from their inception are due to mixed infections, while in many others the infection becomes a mixed one as the disease develops. Past experience and results have fully established the advantages claimed for these "polyvalent" and "mixed Bacterins."

SALVARSAN.

Several abstracts are here made from an article by Corbus of Chicago, which recently appeared in the "Medical Record."

(1) Is it an absolute specific for syphilis and does it produce a *therapia sterilisans magna?* (2) Are there any severe organotropic effects?

Those of you who have watched the reports of the application of this remedy must surely agree that salvarsan, if properly applied, is the best aid yet devised to combat syphilis. Here and there in the German, English, and American literature we read adverse criticisms which come from the pens of those who have had little experience, or else, for various reasons, are not willing to concede to salvarsan its merits.

In the literature in this country it is indeed encouraging to read the beginning of the article by Dr. John A. Fordyce, which says: "A more extended experience has not altered my views regarding the value of salvarsan; on the contrary, I am more and more impressed with its extraordinary therapeutic qualities." Also encouraging is the opinion of Faxton Gardner, who says: "Salvarsan has come to stay. Despite all, it is the most powerful agent we have at our disposal against syphilitic manifestations."

Dose.—The dose practically remains the same as at first established, viz., 0.5 gm. for women and 0.6 gm. for men.

Technique.—The intravenous method has become almost universal on account of its ease of application, the brief inconvenience to the patient, and his rapid recuperation. However, no one method should be used to the exclusion of the others. This is borne out by experience, as in the early cases it is more advantageous to administer the salvarsan intravenously and later to inject it intramuscularly. For the successful carrying out of the intravenous method, some form of a gravity apparatus is preferable, and the more simple of these give the best results.

The method of injecting subcutaneously or intramuscularly in the muscles of the back should be severely condemned. Some of my patients that were injected nine months ago in this way still show large nodular masses. Immediately after the intramuscular injection of the alkaline solution I use hot applications. These are continued for forty-eight hours. The resulting induration and subsequent pain are greatly lessened thereby. All of the alkaline intravenous or intramuscular injections are given in the hospital; except in the severe manifestations the patients are detained only twenty-four hours after intravenous, and forty-eight hours after intramuscular injection.

A SUBSTITUTE FOR BISMUTH PASTE.

Mitchell, of Texas, in a recent number of the American Medical Association comments upon the possible dangers incident to the use of bismuth by the method introduced by Beck of Chicago. In order to do away with such danger he has devised a paste prepared by using chalk in place of bismuth. This he claims is equally satisfactory for X-ray photographs, and suggests that it may be even more accurate than bismuth from a therapeutic standpoint,

THE NEW ENGLAND MEDICAL GAZETTE

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ORIGINAL COMMUNICATIONS.

THE BASIC PRINCIPLES OF VACCINE THERAPY.

By R. R. Mellon, M.D., B.S.

Instructor in Physical Diagnosis and Pathologist to Homœopathic Hospital, University of Michigan, Ann Arbor, Mich.

No doubt any insertion of this subject into the Bureau of Clinical Medicine will elicit adverse comment from you, but I hope to show before I finish that some comprehension of the principles of immunity has a vital place in the internal medicine of the present day.

And in my symposium of some of the more important of these fundaments it is not my desire to deluge you with technical experiments, but principally to give the results of such work as has a practical bearing on some of the therapeutic problems of today.

The subject of immunity has in recent years grown to be one of vast proportions and has yielded more of import to practical medicine than any work of a century.

In these days when so much is made of specific immunity let me call attention to Adami's view that immunity first of all is general. The counterpart of this principle is the fact that a bacterial infection is primarily local. Even when the bacteria gain access to the blood and set up a septicemia, they do not find a hospitable reception by the tissues in general.

In typhoid fever, which is really a septicemia with localizations in Payer's patches, it is indeed a rare thing for the bacilli to produce abscess in the other organs. The urine may be cloudy from their presence, yet what proportion of cases have abscesses in the kidney, spleen or liver? The condition for their arrest in these organs is quite favorable. Instance the spleen with its pulp spaces and slug-

gish circulation, the kidney with its fine capillaries in the Malpighian tufts, and the liver with its net work of capillaries separating the liver cells.

The cells of these organs indifferently destroy various species of bacteria which visit them, whether it be pneumococcus or the bacteria coli, bacteria typhosus or the streptococcus. This immunity is non-specific; it characterizes the species, although varying somewhat with its individual members.

And were this not so, the efficacy of practically every homœopathic remedy in the infections must fall to the ground, for most of them are prescribed non-specifically. And that is why a remedy which, though not a perfect similimum, often ameliorates, provided it be chosen from the similimum group, any one of which could be conceived to have varying degrees of efficiency.

Experimental evidence has shown the ingestion and digestion by the endothelial cells of cultures of bacteria injected into the blood stream in so short a time as fifteen minutes following such a procedure.

The second basic principle is the recognition of the fact that once an organism becomes locally active, it indicates that the local immunity has been overcome, and the activity of the invader, as evidenced by its growth, is only checked by counter influences brought to bear on it by the organism as a whole; in short by the bacteriotropic powers of the serum.

Hektoen and Carlson have recently demonstrated beyond question that the main source of antibodies is the tissues and that they are not elaborated in the blood itself.

On these broad principles depends the result of vaccine therapy, but before they can be utilized in the varying infections there are many subsidiary conditions which must be thoroughly understood.

The first thing to be considered when we desire to immunize an individual is: Does this particular case require an active or a passive immunity? By active immunity I refer to the production of antibodies by an organism in response to poisons introduced into it. By passive immunity I refer to a chemical neutralization of toxins in one individual by antibodies which have been produced in the body of another. Active immunity implies a vaccine; passive immunity implies a serum.

Let me consider a class of cases which is by no means an infrequent experience with all of you.

Patient, much emaciated from the protracted character of the disease. Temperature 105-106; fast, thready pulse; shallow respirations; stupor or delirium. I will assume that this typhoid state described is the result of infection, be it erysipelas, typhoid fever,

streptococcic endocarditis, puerperal septicemia, or the more common pneumococcenia.

In a very large proportion of these cases it would be absurd, nay, criminal, to inflict a patient with a vaccine; to try to stimulate his immunizing mechanism. Nevertheless, among practitioners tincture is given hypodermatically in a futile attempt to whip up an immunizing mechanism already paralyzed from excessive toxemia.

Since the bacteriotropic powers of the blood depend on the tissues, and their power of reaction, could we ever imagine that an organism prostrated by disease could have adequate reaction to additional stimulus? Its power of reaction is gone or at least temporarily paralyzed, and our only recourse is to chemically antidote the toxemia. Then we determine to use passive immunity, in short, performed immunity, the most familiar example of which is diphtheria antitoxin.

For several years most striking results have been obtained by Dr. Watters and others in the treatment of puerperal septicemia with anti-streptococci serum. In a verbal communication, Dr. Willetts of the Western Pennsylvania Hospital of Pittsburgh, related to me a series of nine very bad cases of the condition treated with subcutaneous injections of 15 c.c. of normal human serum every eight hours. This instances another splendid utilization of general or non-specific immunity of which I have spoken.

The second consideration is the most important question of regulation of dosage. If vaccines have taught the therapeutist anything, they have taught the efficacy of the minimum dose. The terms small and large doses are ambiguous ones, since they can be but relative to a varying number of factors. To be more definite, I should say sub-physiological dose,—in immunity terminology, ones so small as to produce little or no negative phase.

The considerations which influence the dose are so many that no hard and fast lines can be drawn. However, there is one which seems a common factor in the experience of many, that is stated by Ross as follows: "The more severe the case, and the less satisfactory the chemical response, the smaller should be the dose of vaccine employed."

Permit me to discover some factors that determine our dosage.

(*A*) *The Pathogenic Organism.*

In case we have a simple infection with the tubercle bacillus, it is absolutely essential that a dose so small be given that no negative phase be produced. In no other infection is the sub-physiological dose as essential as here, because by disregarding it you perceptibly injure the patient and may kill him in a relatively short time. The dose of 1-100,000 mg. is often used as an initial dose, and in very

sensitive persons this has often been found too large. In simple tuberculosis of the genito-urinary tract, in lymphatic gland tuberculosis, and in early tuberculosis of the lung,—all of which are examples of tuberculosis that can be arrested,—this matter of dosage as above stated is very essential.

The streptococcus is another germ in which doses of 2 to 30 million are the rule, and in acne vulgaris, Martin F. Engman of St. Louis, who has been very successful in the treatment of this malady, uses an initial dose of 3 to 5 million.

With the staphylococcus conditions are different, other things being equal. Doses of 200 to 500 million may be used with impunity, and even in case we get a marked negative phase the reactive capacity of the patient generally develops a good, strong, positive phase.

(*B*) *The Febrile State.*

Fever in the infections is significant of the diffusion of toxins, ptomains or the bacteria themselves from a focus of infection. The character of the fever curve often determines which of these offenders or combination of such has broken down the barriers with which nature has opposed them.

In a focus of infection which is so walled off with fibrous tissue that we have apyrexia, we have reason to believe the spontaneous auto-inoculations from such a focus to be small or nil. Conversely, in an intermittent fever we assume an intermittent discharge of toxic material from the focus. And in case of constant high fever, the probabilities are strong that the bacteria with their toxins have been diffused into the blood stream.

In these cases, the dose must naturally be very small if we would not increase the amount of toxic material in the blood and thus do irreparable damage to our patient.

Likewise, in very chronic cases with constant spontaneous auto-inoculation, small doses are the rule. The basis for such treatment in these extremes is really the same,—it depends upon the power of response possessed by the immunizing mechanisms. And as an acute fulminating infection will paralyze it, so will the constant grind of an infection of less virulence, but long continued.

Another almost indispensable factor in the successful use of vaccines is a knowledge of the varying conditions obtaining in the foci of infection. There are four classes which merit attention:

1. Conditions in serous cavities.
2. Conditions in abscess cavities.
3. Conditions in sinuses.
4. Conditions in brawny swelling.

1. *Conditions in Serous Cavities.*

It is not an uncommon experience with surgeons to have remarkable improvement in case of tuberculous peritonitis with ascitis after laparotomy. Wright and Douglass demonstrated that the opsonic power of this lymph was much lower than that of the blood serum of the same patient. So a laparotomy in these cases removes the stagnant lymph, which, with its low bacteriotropic power, forms a conductive environment for the growth of the tubercle bacillus. It also permits a free flushing of the cavity with fresh lymph of high opsonic power. Everyone must have noticed the marked gain in weight and general progress of patients with tuberculous pleural effusions after they have been removed by tapping.

2. *Conditions Prevailing in Abscess Cavities.*

The essential pathology of the abscess, as is well known, consists in disintegration of the leucocytes. A proteolytic ferment is liberated under these conditions, which itself destroys the phagocytic cavity of new leucocytes, but also deopsonizes the lymph which seeks to destroy the invading organism. Here the necessity of cleaning out the abscess cavities and inducing a flushing of the cavity with bactericidal lymph.

3. *In a Sinus.*

Here we have a narrow, possibly tortuous, cavity, lined on the inside by a fibrin wall and on the outside by a fibrous wall. In this condition there is some drainage, but owing to the inability of the bacteriotropic lymph to come in contact with the source of infection, no progress in healing is made.

(4) In the condition known as brawny swelling the lymph is so fibrinous that it refuses to circulate through a damaged tissue.

Wright aptly illustrates this condition by his allusion to a case of Ludwig's angina. Several incisions were made in the cervical region, but cultural attempts showed them to be so dry that not enough moisture was present to fill a platinum loop. On attempting a blood culture the blood clotted in the needle. It was inconceivable how blood which was so viscid as to clot almost instantly in a needle could possibly transude into this tissue. Sixty gr. doses of citric acid every three hours decalcified the blood enough to cause copious bleeding of the incisions. Further intervention proved unnecessary and the patient made an uneventful recovery.

So in such conditions it is absolutely necessary to (1) remove degenerative products; (2) induce hyperemia about the damaged area, and (3) remove all obstacles to the free streaming of the lymph through the infected area.

Bier's well known hyperemic method, Klapp's incision with dry cupping, can be utilized to good advantage to produce the desired end. Wright uses a solution of 5 per cent sodium citrate with 5 per cent sodium chloride to facilitate lymph transudation. The sodium citrate prevents its coagulation and scabbing by decalcifying the lymph.

Time forbids that I cite in detail many of the cases in my own experience which so aptly illustrate the points on which I have laid stress. I shall take the liberty of relating a few of those I consider the most important.

Case 1. R. P. Age 22. Student: typical psoriasis, duration seven years. Lesions seemed to start on forehead six days after an insignificant prick with point of scissors; spread through the hair and later involved chest and extremities. Has been treated locally with chrysarobin, etc. No treatment which he had seemed even to modify the course of the disease. Cultures revealed staphylococcus and a short bacillus, which, as yet, I have not been able to identify. A mixed vaccine of 300 million staphylococcus and 100 million bacilli was prepared. One c.c. at weekly intervals and eight doses caused a disappearance of all but about six of the spots. Laboring under the delusion that the other spots would spontaneously evaporate he left school in June, discarding the vaccine. In a month his body was entirely covered, and he was, if anything, worse than he had ever been. I mailed him twelve tubes of vaccine, same strength as before, and by taking one c.c. in two weeks he was able to keep his skin almost free from spots. He reports that in two days he can notice the effect of a vaccine, as it causes the spots to fade from the center.

I am able in this case, not, as yet, to cure him, but to manipulate the progress of the disease almost at will. I am familiar with the remittances of this condition, but making all due allowance for them, the patient's skin is kept in excellent condition at times when we have reason to think the malady would be quite active.

Case 2. Edith S. 3 years old. Congenital tuberculosis, probably syphilitic also, although Wasserman test was negative. In different parts of the body are very large infiltrations in the skin and subcutaneous tissues, large as walnuts and dark red, exuding pus and fibrinous lymph which scabs over the crater. These are thickest on the face and extremities and on the latter are located near the joints, which are greatly swollen but not very painful. The scalp is in a favoid condition, being one mass of thick scale and pus, which has caused disappearance of hair in streaks. Cultures failed to reveal achorion schœnleinii, but different lesions showed pure cultures of sarcina luteum. A vaccine of 300 million was given every four

days, and in six weeks the child was practically free from these indolent abscesses, and without any local treatment whatever the scalp became perfectly clean. I neglected to say that the child had a corneal ulcer and was very miserable, and had so much photophobia that a bandage was kept constantly over the eyes. Needless to say, we did not cure the tuberculosis, but the child was enabled with local eye treatment to see, and was as cheerful and happy as almost any child could be.

In connection with the sarcina luteum, I might make mention of a case of generalized acne vulgaris complicated with this organism which yielded to treatment by use of an autogenous vaccine.

Case 3. Helen C. Acute pharyngitis which was treated biweekly by painting the throat with silver nitrate, at the end of which time the patient developed 103 degrees temperature; rapid heart; excruciating pains in the joints, which shifted slowly from one to the other. Effusion in the joints of the fingers, wrists, feet and one elbow. Synchronously, a miliary rash started on the chest and extremities which soon covered the entire body. Conjunctivitis and marked photophobia were present, but there was no involvement of the post chain of lymphatics, thus ruling out rubella. Sudamination was marked.

Throat culture showed abundant streptococci. Diagnosis, articular rheumatism.

At this stage 50 million stock streptococci pyogenes was given in the arm at 5 P. M. Temperature was 102½; by eight P. M. it was 103½; arm was edematous and very painful. By midnight the temperature went to 104 and the patient was somewhat delirious. She soon went to sleep and at 5 A. M. had a profuse sweat, the first she had experienced. At 6 A. M. the temperature was 97. In the afternoon it rose to 100.5 and in 3 days was 101. Clinically she showed the most marked relief. The rash disappeared but did not scale. The conjunctivitis disappeared also, the expression was markedly improved and the pain in the joints was markedly insignificant, although the effusion was only slightly affected. Four days after the initial dose a second was given, with milder aggravation than before. In twenty-four hours the temperature was normal and stayed so, and in three days the patient went home. This patient had a well developed case of rheumatic fever, and in ten days she was on her feet, the apparent result of two doses of vaccine.

Two other cases of streptococcic tonsilitis were febrile eighteen days and were ten days in convalescing. They received the ordinary treatment and could be aptly used as control cases.

In two months another developed about the same symptoms. Temp. 105, joint and muscular pains severe. One dose 22 million

streptococcus pyogenes gave a normal temperature the following day, and in two days she left the hospital. All cases were nurses.

I wish to collectively refer to a group of eight cases of chronic gonorrhea from two to six years, standing. They were apparently cured in six to twelve treatments of vaccine with practically no local treatment, excepting in some cases a wash of 2 per cent argyrol. The feature of particular note in these cases was the use of an autogenous vaccine. Previous experience with stock vaccines in this condition was very unsatisfactory.

In four of these cases the number of gonococci found in either the culture or discharge was negative or insignificant, and consequently the vaccine contained very few of these organisms.

My experience combined with others of my personal acquaintance may be briefly epitomized. Anyone who uses stock vaccines of pure gonoccocus in the treatment of chronic gonorrhea will meet with indifferent success, if not failure. The *a priori* considerations as well as the clinical bear testimony to this dictum. In no case of mixed infections, unless it be in the throat, have I found as many different complicating organisms.

They crowd out the gonococcus and themselves assume the primary role in prolonging the condition. My conception of the attitude of the gonococcus in these conditions resembles very much that of the small cur, who by furious barking arouses the belligerent spirit of his colleagues. Having thus stirred up a pandemonium that he figures will be self-perpetuating he modestly and unobtrusively retires to some vantage point, where he may view the unequal struggle with an equal mind.

In the chronic mixed infection, in which the primary offender is a virulent pathogen, we must first obliterate the secondary infection by an autogenous vaccine. For the acute infections, go after the primary offender first, and if necessary, with a stock vaccine; then, if the case is indolent, follow with an autogenous preparation.

This brings me to the question of stock and autogenous vaccines, the relative merits of which I would like to discuss, but suffice it to say, that more accurate results are obtained by using autogenous preparations when at all possible, but stock vaccines may be advantageously used when delay would be harmful.

Ardent advocate as I am of vaccines, they are not to be regarded as a panacea even in all those cases in which they find application. The subject is comparatively new, and doubtless the next decade will show great advances in their preparation and use. The field is very wide; in fact, so extensive that before many years our leading medical colleges will have a chair of serology, either independent or in connection with the chair of pathology. The treatment cannot be classed among the medical fads, and undoubtedly has come to stay.

It is my firm belief that vaccines should not be used indiscriminately by the general practitioner. A thorough knowledge of the principles of immunity is necessary, and one who tampers with poisons that are introduced almost directly into the blood stream should have some adequate knowledge of the field in which he works.

For vaccine and serum venders, the representatives of sundry commercial firms, to indiscriminately laud the virtues of this treatment in an effort to sell their wares, is a reprehensible practice. Such a use of a good thing soon degenerates into a disuse and invariably spells disappointment for its advocates, and furthermore may seriously jeopardize the lives of those who trust their doctor, and who in such instances are the victims of misplaced confidence. This, I might remark, is one of the most important principles of vaccine therapy.

USES AND LIMITATIONS OF BLOOD EXAMINATIONS.*

By W. Henry Wilson, M.D., Chicago, Ill.

The analysis of the blood has come into extensive general use within ten years. This has been due to several causes. First among these, our knowledge of the subject became much more definite about twelve years ago; second, blood is easily obtained and the getting is practically painless. In recent years we have learned that the blood stream carries not only the chemical but the living means of defense.

The field of usefulness for blood diagnosis may be considered under four heads:

First, the diagnosis of the so-called blood diseases such as primary pernicious anemia, chlorosis and leukæmia.

Second, acute infectious diseases.

Third, malignant tumors, and

Fourth, animal parasite.

In the first division of the field of blood diseases the verdict of the blood examination is not only final but exceeds in importance the information secured by other means of investigation. It was the common opinion some years ago that these diseases were rare. The truth is they were rarely discovered. In my personal experience, primary pernicious anemia is not only not rare, but is comparatively frequent. I have under observation from three to five cases all the time. Chlorosis is becoming less frequent than ten years ago.

The second group of diseases, or the acute infections, not only demand the frequent service of the blood analyst, but call into service all the knowledge which he is likely to possess. The blood furnishes us several different means of recognizing disease:—first the composition of the blood itself, which varies with the character of the infection; second, the reaction of the blood serum, which is especially useful in the recognition of typhoid fever; third, the reaction of the serum, or rather certain of its constituents as in the Wasserman test for syphilis; fourth, the making of actual cultures from the blood where septicemia is suspected. In its reaction to infections, diseases are grouped under two heads: those that excite a leucocytosis and those that do not. Under the first group come all of those diseases due to the pus germs and the pneumonia germ. Under the second, come typhoid infections, influenza, measles, German measles and acute tuberculosis.

The diagnosis of suppuration is one of the most frequent and valuable services rendered by the blood tests. It can be done with a great degree of certainty by a man of experience, and is extremely

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helpful in many obscure and deepseated pus infections. The Widal test for typhoid fever is well known to all, and its introduction has done almost as much harm as good. I mean by this that many physicians call for a Widal test when the total blood examination would give them very much more information.

In the matter of malignant tumors the blood, in my experience, has rendered great service. A malignant tumor of either kind, which is large enough to give symptoms, will almost invariably give a blood reaction. This reaction bears a remarkable similarity to that of suppuration. It differs from it, however, in at least two ways: first, the response of the white cells is less extensive while the injury to the red blood is more extensive. Occasionally, as in cancer of the stomach, you get the result of two different forces acting in opposition; one, the toxemia of the cancer, is counterbalanced by the starvation resulting from the diminished function of the stomach. Here, one requires a fine discrimination. In the fourth group of diseases I have had some interesting surprises. The diagnosis of malaria is, of course, well known to everyone, and is one of the most positive things in medicine. The diagnosis of worm infections has in my experience been greatly aided by the blood finding. One or two cases will serve to illustrate. Case 1: A young engineer who had resided in Mexico for some time. Return to the United States for treatment. He presented the appearance of a case of primary pernicious anemia. He had complained of more or less intestinal distress, and one intestinal hemorrhage. The blood showed a white count of 16,000, with the eosinophiles up to 22 per cent. I immediately reported to his physician that he was in all probability dealing with a case of worm infection and advised an examination of the intestinal contents. This investigation showed that the embryos of the hook worm were extremely numerous. Under suitable treatment he rapidly improved.

A second case was that of an old gentleman, complaining of a group of symptoms which strongly suggested cancer of the stomach. The blood examination showed 11 per cent of eosinophiles with a moderate leucocytosis. I advised his physician that he was probably dealing with worm infection, and treatment was given on this theory. The symptoms immediately cleared up, although they had been severe for some weeks. It has been a rather frequent experience to find suggestive evidence of worm infections in the intestinal tract and have them clear up under appropriate treatment, even though absolute evidence as to their existence has not been obtained.

THE LIMITATIONS OF BLOOD EXAMINATIONS.

The blood examination does not in any sense replace the physical examination; in fact, the physical examination should always precede it, in order that the possible lesions may be reduced to the

smallest number. While, as I have said above, the value of the blood tests may be greater than all the others combined, its greatest value can be secured only when used in addition to a thorough physical test.

Second: A blood analysis is technically not only difficult but laborious, which, of course, means expensive. It should therefore be called into use not so much as a routine measure but as a final arbiter. In my opinion the routine making of blood counts by untrained internes is not only very much of a fraud on the patient, but is equally successful in humbugging the physician. The average interne is about as competent to make the various laboratory tests as he is to perform major surgical operations.

I wish to take this opportunity of expressing it as my opinion that medical laboratories, as such, are a blunder. The value of an analysis depends just as largely upon the knowledge and personality of the man as does the value of medical service in any other field. The interpretation of laboratory reports should be made by the man who makes the analysis in consultation with the man who is making the medical examination. In other words, the laboratory man should be not simply an analyst, but a consultant. With the understanding that the hæmotologist is a real consultant and not a mere manipulator of test tubes, then I can say truthfully that there are few diseases in which the diagnosis, the prognosis and frequently the treatment may all be greatly illuminated by a discriminating blood analysis.

WHAT A STUDY OF RECENT LITERATURE UPON SALVARSAN AND NEO-SALVARSAN TEACHES.

By Helmuth Ulrich, M.D., Boston, Mass.

Ever since Ehrlich's introduction of salvarsan, there has been an immense amount of literature put forth regarding this powerful therapeutic agent. The earlier writings are a chaos of opinions ranging from unwarranted optimism to extreme conservatism. More recently, on the other hand, there has been in evidence a fairly uniform consensus of opinion among those who have used the remedy rationally and extensively. Upon one point, however, there is, even now, some disagreement, and that is whether or not salvarsan produces or, as some say, predisposes to neuro-relapses. The bulk of the present discussion centers about this point; and the suspicion that salvarsan may have this effect seems to be the only obstacle to its universal use in practically all cases of syphilis. Ehrlich, Wechselmann, Benario, Schanz and Fehr have shown quite conclusively that neuro-rezidive following salvarsan injections can not be ascribed to it, but are purely syphilitic manifestations due to the action of spirochætes that have escaped destruction.

This opinion has gained ground lately, thanks to the painstaking investigations of Benario, whose reasons for considering neuro-relapses purely syphilitic, are:

First; they occur almost exclusively in the early secondary stage, when the treponema pallidum is most widely disseminated through the body. His figures show that 94.1 per cent fall in this stage and the transition period from the first to the second stages. If salvarsan were at fault, the stage of the disease would exert no influence.

Second; no neuro-rezidive have been observed in non-syphilitics following salvarsan injection.

Third; they are beneficially affected by anti-luetic remedies, including salvarsan.

Fourth; the pathological process, where visible, as in the eye, is of inflammatory nature, which would not be the case were it due to arsenical poisoning.

Fifth; the interval between injection and development of neuro-relapse is too long to indicate any connection between the two.

Sixth; neuro-rezidive occur more frequently after small doses of salvarsan.

Seventh; similar conditions of the cranial nerves arise after the use of mercury.

From the ophthalmological standpoint the theory of toxic arsenical action can not be accepted, according to Fehr, because: (1)

arsenical poisoning rarely causes optic neuritis, while paralysis of ocular muscles has probably never been observed; (2) the neuro-relapse is more often uni- than bi-lateral; (3) other symptoms of arsenical poisoning are absent.

From the literature of 1910-1911 Benario has collected reports of 210 neuro-relapses following salvarsan and 123 following mercury. In these the percentage of affections of the optic nerve following mercury is almost as great as after salvarsan, while the percentages for the acoustic nerve are exactly equal. This seems to disprove not only the idea, believed by few, that salvarsan in itself is toxic, but also the more widely accepted supposition that it produces in these basal nerves a locus minoræ resistentiæ, unless we assume that mercury does the same.

In spite of this, Finger, Rille, Buschke, E. Hoffmann, H. Mueller, and Kannengiesser, although convinced that neuro-rezidive in themselves are purely syphilitic, believe that salvarsan exerts a weakening influence upon the nervous system, so that it falls a more easy prey to the spirochætes that escaped when too small doses of the drug had been administered.

The absolute frequency of neuro-relapses after salvarsan has been computed by Benario to be 0.8 per cent. Increased dosage has reduced this number considerably, as shown by Benario, Fehr, Bayet, Dujardin, and Desneux. Fehr examined 2636 cases ophthalmologically before salvarsan injection, 451 of which were available for examination post injectionem. Of these, thirty-two, who had been normal before, showed pathological ocular conditions afterwards. In computing the percentage this number should, Fehr thinks, be referred to the original number of cases, e. g., 2636, rather than 451 examined; for it is fair to assume that none or only a small number of those who were not examined could have had any ocular lesion, else they would have been referred for examination. Of the thirty-two, twelve had iritis, three chorio-retinitis, eleven optic neuritis, and six paralysis of ocular muscles. An effort was made to determine whether these conditions were due to salvarsan; whether mercury shows an equal number of neuro-relapses; and whether the recent and better methods of salvarsan therapy have reduced their number.

The answer to the first is an emphatic *No,* for the conditions were usually unilateral; they appeared from two weeks to nine months after the injection; they were of an inflammatory nature and typically syphilitic; anti-luetic measures, including repeated salvarsan injections, cured most cases, were beneficial in others, and left only a few unaffected. That the use of mercury seems to be followed by an equal number of relapses may be shown from a comparison of figures given by Grœnouw, who claims that the frequency of

iritis in syphilis is 0.8-6 per cent. The percentage of Fehr's cases, even when the affected ones are referred to the small number of those examined (451), is only 2.6 per cent, showing no higher frequency of this complication. The beneficial effects of increased dosage are apparent from the fact that of the thirty-two cases observed during the two years, twenty-six occurred in the first twelve months.

Summing up and weighing the evidence carefully, it may be said that neuro-rezidive, per se, are purely syphilitic, and that by most observers salvarsan is not considered to be a factor, directly or indirectly, in their etiology; although some believe that it exerts a weakening influence upon the nervous system, so that any spirochætes that have escaped destruction because of insufficient dosage have a better opportunity to produce their baneful effects.

Assuming such a neuro-tropic action for salvarsan, it seems that the newer preparation, neo-salvarsan, is less at fault in this as in other respects, for following about 1500 injections, reported from various sources, not one neuro-relapse or other unpleasant complication has occurred thus far, a statement which certainly could not be made of salvarsan for the same length of time. Its success may be ascribed to its own inherent superiority over the older preparation and, perhaps even more, to the application of valuable experience, particularly in regard to dosage, gained during the use of its predecessor.

In the matter of dosage, which is of the greatest importance, all authorities, without exception, seem to be in accord. All agree that neuro-rezidive or neuro-relapses follow, almost always, insufficient or too few injections. That this is not appreciated by the average physician, is shown by the fact that patients, referred for treatment, have been told that an intravenous injection of salvarsan followed by a stay of, at the most, twenty-four hours in the hospital, was all that would be required to bring about a relief of symptoms and, perhaps, a cure. This, of course, is possible, but highly improbable in most cases, and the raison d'être of this article is to impress upon its readers that the administration of salvarsan or neo-salvarsan is not a matter of hours. One, or even two injections are rarely sufficient. Their number and frequency can be most accurately determined by repeated blood examinations for Wassermann's reaction; and this method of controlling the treatment should be insisted upon in all cases. Undoubtedly, lumbar puncture and examination of the spinal fluid are better guides than the blood test and should be made use of whenever possible; but the natural aversion of patients to this procedure will prevent its routine employment.

Practically all authorities are agreed that intravenous infusion is the method of choice of salvarsan administration. This is be-

still so remains.
cause intramuscular injection is followed by local infiltration, persistent pain and, sometimes, abscess formation. Nevertheless, Ehrlich himself, quoted by Wolbarst, maintains that "salvarsan is essentially an intramuscular injection," and that the best results will be obtained when some painless intramuscular method is devised. Neo-salvarsan, because of the neutral reaction of its solution, is a decided advance in this direction. Wolbarst of New York has experimented with it along these lines and, after trying several methods, recommends the following as being practically painless: "The powder is mixed in a mortar containing three or four c.c. glycerine (C. P.); to this is added a few drops of 1 per cent beta eucain or alypin solution in distilled water. The suspension has now been converted into an almost clear watery solution. The buttocks are painted with iodine, and four spots located, two in each buttock, into which 1 c.c. of the solution is injected and slight pressure made by the hand. The patient is not confined to bed." Intramuscular injection of neosalvarsan is preferred also by Rytina of Baltimore, while Schreiber and McDonagh recommend the intravenous route even with this agent.

To prepare the drug for intravenous infusion it is poured directly from the ampule into freshly distilled sterile water and gently shaken. Vigorous shaking may cause oxidation and must be avoided. For the same reason it is advisable to prepare the solution just before use. As a solvent, water is preferable to saline, which, in concentrations beyond 0.4 per cent. causes cloudiness. Usually, the solution is made by adding the amount of drug to be used (0.6 gm-1.5 gm.) to 100-200 c.c. water. This solution is hypotonic and causes slight hemolysis, but diffusion into the blood stream is so rapid that no scruples need be entertained as to any deleterious after effects. The dosage varies with the condition of the patient; the average for moderately robust subjects is 1.5 gm. for men, and 1.2 gm. for women. Treatment should be begun with smaller doses, e. g., 0.9 gm. for men and .75 gm. for women, to be increased until the full dose is reached.

Both preparations are contra-indicated in advanced cardio-vascular disease, advanced degeneration of the central nervous system, and non-syphilitic cachexia. Ocular conditions of syphilitic origin do not prohibit their use. Indeed, exhibition of these drugs has been followed by most remarkable effects in luetic iritis, while in parenchymatous keratitis they are usually less potent. Reese, of New York, thinks that they should not be used in the presence of simple, spinal, non-inflammatory optic neuritis, especially when occurring in tabes dorsalis or dementia paralytica. Fordyce, however, in discussing Reese's paper, directly opposes this view and claims that no ocular condition whatever affords a contra-indication. As regards

aural symptoms, Perkins says that, if "non-specific in origin, they do not contra-indicate the administration of 606, and if specific in nature they furnish a positive indication for its administration." Special precautions as to dosage are necessary in the presencc of pronounced headache or other cerebral manifestations and any nervous symptoms whatever. In a few cases of paralytic dementia improvement has followed the application of salvarsan, while in most it has no apparent effect. Some of the symptoms of tabes dorsalis, on the other hand, seem to yield more readily to its influence; but results are very variable and often negative.

The following outline of a course of neo-salvarsan is a modified combination of methods used and advocated by Schreiber of Germany (frequency of injections and dosage), McDonagh of England (most admirable and thorough method of controlling treatment by means of Wassermann's reaction), and Wolbarst of New York (intramuscular injection):

Unless previously done, a Wassermann test is made when the patient enters the hospital. No special preparation of the patient is necessary, except that it is well for him to abstain from solid food on the day of the first injection. (This rule applies particularly in case salvarsan is to be given, which has a greater tendency to produce transient nausea, vomiting, and diarrhoea.) The first injection of neo-salvarsan is given on the afternoon of the first day. The patient remains in bed until the following morning. On the second day he is allowed out of bed and is put on full diet; and on the third day solids are again withheld. Blood for a Wassermann reaction is taken just prior to the second infusion, which is given, even if the Wassermann is negative, in the afternoon. Should the Wassermann still be positive, another injection, preceded by a Wassermann, is given on the fifth day and repeated every second day until the Wassermann reaction is negative, which is usually the case after four injections. At least two doses should be administered in all cases. If the Wassermann is negative at any time after the second intravenous infusion, an intramuscular injection is given. Then the patient is discharged and told to report for a Wassermann every seven days until four tests have been made. Should any one of these prove positive, which sometimes happens, even after four injections, another course of treatments must be instituted and followed until the Wassermann is again negative. In exceptional cases this cycle of treating and testing may be necessary several times. If the Wassermann remains negative for four successive weekly tests after the last injection, the patient is told to report at the end of six to twelve months for another Wassermann. If this is positive, the whole process must be repeated; if negative, then either the patient is cured, or the disease is latent. To decide the

question, a provocative infusion of neo-salvarsan, as first advocated by Gennerich and Milian and, later, by McDonagh, Fehr, and others, is given, which will change the negative Wassermann to positive, usually in forty-eight hours, in the latent cases, while in the cured cases the test will remain negative. The latent cases are treated like those in which the Wassermann was positive without provocative infusion of the drug. This may seem a long and tedious process, but, except in refractory cases, is much less tedious than a prolonged course of mercury and potassium iodid. Again, mercury is probably not so certain a cure for syphilis as it was thought to be. McDonagh believes that it no doubt cures syphilis sometimes, but that more frequently it only relieves symptoms and forces the disease into latency, from which it may emerge at any future occasion. Just such an occasion is furnished by a provocative injection of neo-salvarsan, following which a persistently negative Wassermann in several patients who had faithfully followed a three to four years' course of mercurial treatment became quickly and strongly positive, with a return of general syphilitic symptoms.

From what has been said it is evident that a provocative injection of neo-salvarsan should prove a valuable diagnostic procedure in syphilitic suspects giving a negative Wassermann reaction. As McDonagh puts it, if a patient who has had syphilis gives a negative Wassermann reaction it means that either he is cured or the disease is latent; and an injection of neo-salvarsan is a ready means of differentiation.

As regards the drug itself, neo-salvarsan (which bears the laboratory number 914, indicating the amount of time and labor expended in improving the older preparation 606) is, acording to Ehrlich, derived from salvarsan through condensation of this substance with formaldehyde sulphoxylate of sodium (CH2 (OH) O. SO. Na). It is a yellowish powder, like salvarsan, over which, however, it possesses the great advantage of going very easily into aqueous solution, which is neutral. Therefore, neutralization with sodium hydroxide, necessary with the acid solution of salvarsan, need no longer be done. Most of the immediate unpleasant effects, including local infiltration and burning pains and nausea, vomiting, diarrhœa, and headache, following salvarsan infusion, have been laid to the sodium hydroxid used for neutralization.

Therapeutically, 1.5 gm. neo-salvarsan corresponds to 1 gm. salvarsan. Toxicologic researches have shown that the newer preparation is much less poisonous, the dosis tolerata for the rabbit being about 0.2 gm. as compared with 0.08 gm. of salvarsan. This lessened toxicity does not by any means preclude high therapeutic efficacy, for researches by Ehrlich and later experience have shown that neo-salvarsan is even more active than salvarsan.

In conclusion, the following points regarding neo-salvarsan, which seems destined to displace its forerunner, may be emphasized:

Contra-indications: They are the same for both preparations. Advanced cardio-vascular disease; advanced degeneration of the central nervous system; non-syphilitic cachexia; decided arsenical idiosyncrasy. According to several authors diabetes, nephritis, tuberculosis, pregnancy, and optic or aural conditions do not afford contra-indications; but caution as to dosage should be practiced in their presence.

Number of injections: depends upon the Wassermann reaction.

Frequency of injections: usually every forty-eight hours.

Place for administering treatments: preferably in a hospital.

Time of stay in hospital: usually eight days, unless more than four successive injections are to be given.

Dosage: depends upon condition of the patient.

Average:	Men	Women
1st day	.9 gm	.75 gm
3rd day	1.3 gm	1. gm
5th day	1.5 gm	1.25 gm
7th day	1.5 gm	1.4 gm
Total	5.2 gm	4.4 gm

Much smaller initial doses must be used in weak individuals and in the presence of pronounced headache and other cerebral manifestations and any nervous symptoms whatever.

Method of administration: intravenous infusion and intramuscular injection. Subcutaneous injection should not be made use of.

Wassermann reaction and other pathological examinations: a Wassermann test before and forty-eight hours after each injection and again seven, fourteen, twenty-one, and twenty-eight days after the last injection. At the end of six to twelve months, if the Wassermann be still negative, a provocative injection of neo-salvarsan is given and a Wassermann done forty-eight hours and seven, fourteen, twenty-one, and twenty-eight days afterwards. If the reaction is negative each time, cure is considered complete.

Lumbar puncture should be made, whenever possible, before, one week after, and one month after treatment, and the following tests made upon the spinal fluid: pressure, cell count, albumin determination, Wassermann reaction. Examination of lesions for treponema pallidum before and repeatedly during and after treatment should prove interesting and may be of value.

Results of treatment: it is possible to cure syphilis (that is, bring

about a permanent negative Wasserman reaction) in the primary and secondary stages, while in a large majority of tertiary cases cure is impossible, but symptoms may be abolished.

Relation to mercury and potassium iodid: best results are obtained when these agents are used in conjunction with Ehrlich's remedy.

Effect upon the nervous system: salvarsan and neo-salvarsan probably are not responsible, directly or indirectly, for the occurrence of neuro-relapses, although some observers believe that they exert a neurotropic influence by reason of which any spirochætes that escaped destruction because of insufficient dosage gain an opportunity to produce their deleterious effects.

Advantages of neo-salvarsan (914) over salvarsan (606):

1. More soluble.
2. Neutral in reaction, therefore not necessitating addition of NaOH, which seems to be the cause of local infiltration, burning pains, and general disturbances immediately following salvarsan infusions.
3. Better borne, so that larger doses may be given.
4. Equally good, perhaps better therapeutic results. Tertiary symptoms that were resistent to salvarsan have frequently yielded to neo-salvarsan. Wassermann reaction becomes negative in less time after neo-salvarsan.
5. Extensive use has not resulted in one neuro-relapse.
6. It is better adapted to intramuscular injection.
7. Leakage into surrounding tissues is absorbed much more quickly and causes less trouble.
8. Intravenous infusions may be given more frequently.

MYOCARDITIS.*

By A. B. Schneider, M.D., Cleveland, Ohio.

For the object of this paper, which is chiefly to present the treatment of chronic myocarditis, the acute form may be dismissed with the statement that its presence is usually masked by the symptoms of the infection of which it is a complication, that its treatment is involved in the treatment of said primary disease and that its diagnosis is usually accurately made only at the post mortem table.

Chronic myocarditis, from the same viewpoint, i. e., that of treatment, may be held to include fatty degeneration and fatty infiltration, as well as the various forms of sclerotic degeneration of the heart muscle.

The symptomatology is, in large measure, the same, whether the degeneration is the result of coronary vessel disease, toxemia, anemia, or is the sequel of infectious disease of the endocardium or pericardium. There is no pathognomonic symptomatology of chronic myocarditis. Progressive enfeeblement of the heart sounds, with loss of the booming quality of the first sound, making the first and second sounds similar in character, and the subsequent development of a relative mitral systolic murmur, may be accepted as objective evidence of a chronic myocarditis. In by far the majority of cases, however, the physical signs are not distinctive. Feeble, rapid irregular pulse and difficulty in breathing is common to all forms. Perhaps the unusually slow pulse, which is sometimes a feature, is oftener found in the fatty heart; but the Stokes-Adams syndrome depends more upon the location of the degenerated area than upon its character, and is in fact, oftener a complication of sclerotic than of fatty myocarditis. This is true also of angina pectoris, and the cases which present mental disturbance and pseudo apoplectic attacks as prominent symptoms.

Venous stasis especially of the areas tributary to the inferior vena cava, of course, keeps pace with the progressive weakening of the heart muscle and is accelerated by the valvular incompetence, which sooner or later develops, if it is not originally present as a complication. Edema supervenes and the picture in its last analysis is not very different from that of any chronic cardiac disease.

The prognosis is unfavorable, especially in cases complicated with arterio-sclerosis and nephritis. Fatty infiltration may be greatly benefited by hygienic and dietetic measures.

Syphilitic myocarditis is especially amenable to remedial treatment.

In general, a patient suffering from chronic myocarditis must be managed with the greatest care. Rest is very important, yet

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some cases should be ordered exercise as an essential part of the treatment. Graduated exercise according to the Schott method is of decided benefit, and the hydrotherapeutic measures made famous at Bad Nauheim are indicated in many cases.

Nothing taxes the physician's judgment so much as the amount of activity to allow these patients. Freedom from business responsibilities is as important as physical rest. Excitement and nervous tax must be avoided. Digestion must be carefully watched. A mixed diet is best. Much meat is bad for the patient with arteriosclerosis and high blood pressure. On the other hand, a rich carbohydrate diet increases the fat and aggravates the condition of the patient with fatty infiltration. Alcohol in moderation is of benefit in the majority of cases. Tobacco is harmful. Coffee is generally harmful.

Aconite is a remedy not to be passed by in chronic affections, when the characteristic anxiety and restlessness, rapid pulse, palpitation and pallor are present.

Arsenicum, or preferably arsenicum iodide, is indicated by dyspnea; weak, rapid, irregular pulse; prostration; restlessness and anguish; edema.

Cactus is indicated by pain of a constrictive clutching character; heaviness and oppression of the chest.

Digitalis is indicated by a feeble, irregular pulse with a feeling of anxiety and heaviness over the heart. For these symptoms, digitalis in dilution is decidedly of benefit.

Ferrum Phos.—Cardiac oppression; flushing of the face; hemopthisis.

Lycopus—rapid, violent action of the heart; precordial pain; pulmonary congestion.

Mellilotus—dyspnea and precordial anxiety.

Phosphorus—especially in fatty degeneration with dyspnea, precordial anxiety and cough.

Spigelia—pain of a sharp stabbing character, radiating to the shoulder and arm.

It is surprising how effective these remedies prove themselves in serious cases. Yet, sooner or later, definite physiologic medication must be resorted to in most cases. When heart failure is imminent, halfway measures are reprehensible. Digitalis is then the sovereign remedy, and should be administered in 10 to 15-drop doses every four hours until the pulse becomes slower and steadier and dyspnea is relieved. The dose can gradually be diminished but may be given in smaller amount, 2 to 5 drops several times a day over a long period of time. Nausea and diminished secretion of urine are danger signals indicating withdrawal of the drug. Digitalis should not be continued after compensation has been established.

Cratægus in 5 to 10-drop doses of the tincture several times daily can often be used to advantage to maintain the compensation established with digitalis.

It does not seem necessary to give digitalis to the point of such excessive arterial tension that nitro-glycerine must be given to correct the hypertension. When this exists idiopathically, however, glonoin several times a day is a very effective remedy. Kali-iodide or strontium iodide are especially useful here in cases with a syphilitic history.

Strophanthus in 5 to 10-drop doses, several times daily, is an effective cardiac tonic. It is not as reliable as digitalis and requires a longer period to develop its effect. It is, however, devoid of toxic action and does not increase the arterial tension.

Spartein, adonis, convallaria and apocynin are less reliable cardiac tonics than the foregoing, with, however, special diuretic effects which recommend them in selected cases.

Strychnine is an effective heart stimulant, but in the emergencies in which its use is justified it must be given hypodermatically, 1-60 to 1-30 of a grain every fifteen to thirty minutes.

Adrenalin, 20 to 30 drops, is also a good stimulant.

Caffeine is a reliable and efficient stimulant.

Camphor in olive oil, obtainable now in sterile hermetically sealed ampules, is very prompt and effective. Ether 20 to 30 drops hypodermically is a certain promptly acting stimulant.

Morphine hypodermically in small doses, 1-16 to 1-8 gr., is often the only measure which will relieve the cardiac dyspnea and the restlessness and anxiety which are such marked features of these cases. Judiciously used this is one of the best heart remedies we have.

ACUTE POLIOMYELITIS.*

By Henry F. Schantz, M.D., Reading, Pa.

Ten years ago a symposium on the treatment of infectious diseases would not have included acute poliomyelitis. The disease was described in the books, but under the classification of general nervous diseases. The epidemics which have occurred in this country since that time, and the resulting physical wrecks which have been studied since then, in conjunction with the bacteriological researches, have aroused the profession to the recognition of this disease as one of the infectious class. Today the State Boards of Health have added acute poliomyelitis to the list of "reportable diseases."

It would be interesting to trace the history of the several epidemics and the laboratory findings of the men who have been studying the disease, but that has no place in this symposium.

The opinions regarding etiology have changed. Formerly dietetic sins, traumatism, dentition, sudden chilling, and the acute infectious diseases were classed as causes, but since the scientifically conducted studies of these cases have been made, both clinically as well as in the research laboratories, acute poliomyelitis has been added to the list of the infectious diseases and is now recognized as dependent upon a virus, ultra-microscopic, as yet not isolated, which enters the system of the sufferer through the nasal mucous membranes or those of the gastric-intestinal tract, and finds its point of attack in the grey matter and membranes of the cord, more so than in the white matter, causing an edema, associated with hemorrhage, and this followed by marked degeneration and necrosis of nerve cells, resulting in a flaccid paralysis of the muscles supplied by these cells.

The attack is associated with cerebral, bulbar, spinal or neuritic symptoms, dependent upon the region involved.

Coryza, vomiting, accelerated pulse, temperature of 101 degrees to 105 degrees, tenderness in neck and legs, retraction of neck, drowsiness, stupor, convulsions, twitching of muscles, Kernig's sign, unequal rigidity in the two legs, constipation, retention of urine are among the symptoms recorded by the observers in different epidemics. The onset is often so insidious as not to arouse suspicion until about the third day of the attack, when the paralysis is discovered, and the diagnosis is clear.

This flaccid paralysis may affect almost any part of the body, though the arms and legs suffer more frequently. There is hyperesthesia, with neuralgic pains, shooting in character, causing the "night cry" similar to that of meningitis. The nutrition of the affected muscles is markedly diminished, the parts are cool, circulation low, color pale and tendon reflexes reduced or abolished. Then come the

* Read before the American Institute of Homœopathy, June, 1 .

atrophy and contractions of the unaffected muscles; even the nutrition of the bones is lowered, and the formerly healthy patient is left a pitiable remnant of his former self. The disease seems to have a preference for the well nourished rather than the puny.

The indications for early treatment are: isolation *rest,* bland diet, regulation of bowels and kidneys, baths and the selected remedy.

If a physician is called to see a child suffering from this combination of symptoms, vomiting, constipation, retention of urine, rigidity of neck and spine, moderate fever, and especially if this be during the summer season, he must seriously consider the possibility of having a case of poliomyelitis and order the isolation of that patient, and if diagnosis is mistaken no harm results. Isolation of these cases is demanded by Boards of Health and rightly so, for if we are to accomplish any results either in treatment of patient or in prevention of spread of the disease, the case must be isolated for protection of family and community.

Absolute rest must be secured and maintained, and this means rest of both mind and body. To secure the body rest it may be necessary to use supporting apparatus, either splints, plaster cast, or a Bradford frame.

The constipation suggests the use of the enema, to remove the retained bowel contents, and the use of repeated enemata aids in re-establishing the tone of the bladder.

Fresh air and a diet of easily digested food must be supplied. Warm baths, keeping the skin active, aid the kidneys.

During the intensity of attack, application of cold—ice-bags rather than moist applications,—to the head and spine aid in reducing the intensity of the congestion.

Some of the observers in the old school advise the use of urotropin and the salicylates.

Let me express the hope that in serum therapy we may find the remedy, which, acting as an antitoxin, will speedily and early antagonize the irritating action of the virus, which causes the early edema, and thus acting rapidly and effectively save the nerve cells from destruction.

In the acute stage, the administration of a remedy selected according to our homœopathic method of totality seems to decrease the intensity of attack, and gelsemium and belladonna are the remedies which have been most frequently indicated, although other observers report the use of aconite, dulcamara, helleborus, stramonium and rhus toxicodendron for the acute symptoms.

After the paralysis has developed, the objects of treatment are:—the preservation or the re-establishing of the nutrition; stimulation of activity of the muscles and nerves; prevention of contraction of unaffected muscles and correction of deformities.

Massage, vibration and electricity have a place in the treatment, but not early, for they increase the pain and disturb the patient's rest. The masseuse must be instructed as to which muscles are affected and directed to stretch the antagonistic muscles to limit their contraction, and give the weakened muscles an opportunity to regain tone.

The use of the faradic current to stimulate what little reaction remains, and the high frequency current to tone up circulation, are valuable adjuvants during the chronic stage.

Electric light bakers, or the gas-heated bakers are useful in stimulating circulation. After the skin is rendered active by the use of the baker, applications of cool wet towel frictions, followed by dry rubbing.

A little thing for the comfort of the patient, is a frame for the support of the bed covers, and this also tends to prevent the "toe drop" which is a frequent symptom. This brings us to the general question of support. Braces for the limitation of contractions and the favoring of the use of the weakened muscles are necessary, and must be intelligently applied, and especially fitted for each case. No stock brace dare be used, if good results are anticipated. Braces help to get the patient on his feet, and this aids in re-establishing physiological functional use of the affected parts, and nothing so aids in restoration of the muscles as physiological functional use.

Exercise of the muscles is needed, but must be along prescribed lines so as to exercise but not tire the tissues.

Many internal remedies may be indicated in this stage of the disease. Those most used and which have been reported, are: plumbum, phosphorus, secale, kali iod., silicea, sulphur, argentum nit., cuprum ars., strychnia, phosphoric acid, calcarea phos.

For the correction of the deformities, which cannot be prevented in cases where nerve function is destroyed, surgical intervention is the indication. While the surgical treatment is not strictly a part of this paper, it warrants mention, for some very original methods have been used to give these patients legs which give them fairly good service. Tendons have been cut, tendons attached to other tendons, tendons sutured to periosteum, muscles have been severed, muscles transplanted and attached to muscles which have not been affected, nerves have been sutured to actively functionating nerves, and esteoplastic operations on joints performed. In fact, each case must be treated according to its individual needs, and not according to a book rule.

In conclusion, let me impress the importance of the early diagnosis, isolation and early active treatment of these cases of acute poliomyelitis—for therein lies the hope of relief to the patient, and limitation of the danger of widely distributed epidemics.

THE EFFICIENT NURSE.*

By Frank W. Patch, M.D., Framingham, Mass.

In a paper prepared by the writer for the New England Association for the Education of Nurses several years ago there occurred these words: "An intelligent, educated nurse, filled with the enthusiasm of youth and knowledge, is a possible center of great influence for good in any community where she may serve." Your chairman has asked me to speak today of the elements in the education of the nurse which tend to help her to become of the greatest possible help to the general practitioner of medicine. The subject is so imposing that I hesitate even to attempt it, knowing something of the thought that has been put forth during the past twenty years by many men and women far more able to cope with the problem than I am.

The training of the efficient nurse begins in her own home at about the age of five years. The matrons of the scattered training schools are the wise, simple, sensible mothers who love their homes and are willing to devote some portion of each day to the instruction of their little daughters in the art of simple domestic economy. Included in such a curriculum are daily lessons in order; in the elements of cleanliness; in simple cooking and the care of the home; in kindliness and gentleness; in the desire to be helpful to others in every possible manner, and in self control. With these simple, yet oh, how valuable, qualities thoroughly imbued in the minds of our prospective pupil-nurses, we have gone a long way toward solving the problem of the efficient nurse. It has given them the foundation for all future superiority, the absence of which no purely technical training can ever supplant, for no qualities can make so much for real efficiency in the nurse in her relation to the physician or family as those deep seated humanitarian instincts which make it a real pleasure for her to serve unselfishly those in need.

The general practitioner should have a nurse who is ever ready and ever willing, who is physically strong and mentally loyal; given a basic foundation of home training, what can technical schools and experience do to supply the great demand? If every young woman who adopts the vocation of nursing could do so on account of especial natural fitness we should have little trouble, for with the best material almost any form of systematic training will result in a modicum of efficiency, but we who are interested in training schools know that those in charge must take what they can get, and the offering is usually of an average value only, at the beginning. Many of the girls develop wonderfully, however, in the course of training

* Read before the Worcester County branch of the Mass. Homœopathic Medical Society, February, 1912.

and become strong, intelligent women with a sense of duty that would never be deemed possible when they commence the course. All depends on the depth of character with which these women are gifted. Nothing is more discouraging than a flippant nature in one who seeks to be a nurse; the quicker it is discovered the better, for she should be dropped from the school immediately on apprehension.

In dealing with an occupation so intimately related to the humanitarian side of life as is that of nursing the matter of character becomes of the utmost importance. One cannot imagine a greater anomaly than a really efficient nurse who is wanting in those qualities which enter into the composition of the well trained woman. Unfortunately, hospital superintendents are seldom in a position to choose their pupils as carefully as they would like, but the course in training itself is, after all, the best censor of ability that one can imagine. Very few women who have not a good degree of innate dignity and self respect have sufficient persistence to complete the hard three years in training that the best schools require. Consequently, whatever other deficiencies our graduate nurses may have they are not weaklings.

Next in order in the creation of the efficient nurse I would mention the direction, or better, the clinical instruction that she may receive during the first year of her hospital experience and the associations of that year. It goes without saying that if we are to have really efficient nurses they must have wise and systematic direction during the formative period of their studentship, for that period corresponds to the impressionable age of adolescence when example and environment mean so much to the growing youth. The methods of training schools during the past twenty-five years have undergone many and far reaching changes, but even today, taken as a whole, they fall far short of the best standard. The profession so far has developed few strong leaders, and it is still most difficult for the average school to secure a really competent superintendent. I know of no position which woman is called upon to fill that seems to me to demand so much. She must be a good executive, able to formulate plans and carry them out in a systematic manner. She must have unfailing patience and tact in order that she may deal wisely with physicians, patients and the public. She must be thoroughly versed in all the minute details of her profession and, moreover, able to impart this knowledge to others through an instinctive teaching habit and an almost martinet-like routine. Finally she should be a true mother-superior to the multitude of young women who look up to her for guidance in all things. She must be absolutely just at all times, maintain discipline, settle controversies and adjust differences. She must be a moral and spiritual helper to all

in need and ultimate her profession in her daily life. You will feel that I have sketched an impossible paragon, yet such women do exist all about us. It must be confessed that they are not frequently found in hospitals, yet perhaps the proportion is as great there as elsewhere, only I do believe that we should make an effort to enroll many more such women. In placing such a woman at the head of a training school we are doing more toward educating a body of efficient nurses than by any other one means possible. Her influence for good over the unformed minds and habits of her pupils will be more far reaching than we can foresee. Few young women of any approach to real character can come into daily contact with such a nature without growing into some semblance of her model, month by month. The undesirable will drop out on account of the rarity of the atmosphere if for no other reason. The result will be a group of unusually high principled and earnest students who later will recruit the body of efficient women that physicians desire to call into their service. This then is the second point to be emphasized in training. The value of wise and orderly direction in the beginning and of an uplifting association throughout the hospital residence. Through these influences young women will develop astonishingly in three years and at the same time they will learn to love the work on account of the opportunity it presents for the highest kind of humanitarian service. We shall be surprised alike at the technical superiority and the enlarged vision that they will display and marvel at how it has all come about.

All modern teaching in whatever department of instruction, but especially in professional and technical fields, is rapidly being placed on a foundation where the doing of things is supplanting the old method of telling how things ought to be done. Even in the teaching of the youngest children we may now witness a gifted Italian woman demonstrating the advantage of developing the brain through means of the hand. In other words, forming into a method what many of us have long done with our own children, that is, to allow them the natural opportunity of performing with their own hands the countless little things that children want to do from day to day untrammelled by arbitrary convention. This constant struggle to overcome obstacles seems to be a necessary accompaniment of all human progress.

In the nursing world no less than elsewhere, the efficient individual must be made such through her opportunity for actual bedside, ward and home experience in caring for the sick. It is not enough that students simply perform these various operations, but they must be taught by constant insistence throughout the course to do them correctly and thoroughly. Within the past few years it has become very evident to the managers of the best schools that there

has been too much effort put into giving the pupil nurses superficial instruction in medical topics which they were not prepared for and could not digest, and too little care in providing nurse instructors who were fitted by nature and training to impart the kind of knowledge most useful in the creation of efficient nurses. It looks well to see a list of eminent physicians as lecturers in a training school, but we must confess that it does not accomplish the needful end, that of supplying the best possible knowledge to our students. A certain part of the teaching in training schools must of necessity be carried out by physicians. Systematic courses in anatomy and physiology must be thoroughly given. Nurses must be taught something of clinical observation, of hygiene, of emergency work and of ethics from the physician's point of view. Few busy practising physicians have the time or inclination to do this work as it should be done. The plan followed by the Massachusetts General Hospital of employing two teaching physicians for this especial purpose and paying them for the service seems to me a most excellent one and it has been a marked success there. As for the usual list of medical or semi-medical lectures given to the nurses on a variety of purely medical topics, such as materia medica, nervous diseases, disease of the eye and ear, bacteriology, urinalysis, and so on, I believe them to be worse than useless. The pupils have had no preliminary training making it possible for them to digest such knowledge; they have little adaptability for it. Most of the talk is so far over their heads that the best they can do in examination is to repeat, puppet-like, some points the instructor has given them. Moreover they are given no definite time for study and consequently are too tired at the end of a long day's work to make any headway in the stupendous task that has been set before them. The efficient nurse becomes such on account of the practical experience which she accumulates under competent supervision during her years of training, seldom on account of her medical lectures. Hence I would advocate that in the conduct of our schools we pay great attention to the qualities of our nurse-instructors. The actual art of nursing can only be taught by nurses themselves. We must provide object teaching, as needful for nurses as for engineers, by those who are not only good nurses themselves, but are versed in the gift of teaching, and we must see that they are well paid, for it is a rare service that these women render, not only to the schools, but to the physician and the public as well.

As we are discussing the means by which the nurse is to become most efficient for the needs of a general practitioner I must mention two other phases of experience which I believe to be absolutely essential to the well trained nurse before the completion of her apprenticeship. These are district work, and the care of private patients in their homes, all of which should be done under close super-

vision by the paid nurse-instructors of the school. In no other way can the humanitarian, caretaking instinct be so well developed as through district work, where the nurse is obliged to do her work under all sorts of trying conditions, with few appliances for the comfort of those she serves, where her true motherly instinct must be brought into play every hour of the day and an opportunity offered to instruct and help so many of those with whom she comes in contact. Here we can best train social workers who may co-operate with the associations whose work of relief would be impossible without some means of getting into close touch with the needy and suffering.

Again, in experience outside the hospital; work in the homes of the well-to-do middle classes, during the last year of her course, gives the pupil a different but no less valuable start in her chosen field. It should be associated with physicians connected with the school and under supervision of nurse instructors. Through this means the pupil gains self reliance. She may first try her wings, so to speak, outside the home nest. She is forced for the first time to deal with the public in the form of the family, and their servants if they have any. All her tact is called into requisition, and she has an opportunity to apply the knowledge she has gained under conditions identical with those she will meet in after life. Yet she does all this under supervision and in the shadow and protection of her alma mater. Herein, in my estimation, lies one of the greatest secrets in the training of the efficient nurse for the general practitioner. In her he finds a helpmate who has grown to be what she is step by step, through all the various stages of apprenticeship, by means of intelligently directed experience. She has become proficient through the actual doing of things from the simplest elements of domestic economy to the carrying out of modern surgical or obstetrical technic. She has seen and experienced sick-life in all its phases, in the hospital ward, in the home of degraded poor, the needy and respectable sufferers, and in the more prosperous families of the well-to-do. She has had opportunity to know something of the problems that confront all of these people,—and they all have their problems,—how to meet them and where her own especial form of service will be most efficacious.

SOME MODES OF TUBERCULAR INFECTION AMONGST TEXTILE WORKERS.*

By John Hillman Bennett, M.D., Pawtucket, R. I.

The tuberculosis problem means a great deal to the State of Rhode Island—which I have the honor of representing—as unfortunately "Little Rhody" has about the highest death rate for that disease of any State in the union. While we have a population of 542,610, one of the most thickly populated States in the world, for its size, yet I think that many of you who attended the Institute meeting with us at Narragansett Pier last year will bear me out in the statement that there are acres and acres of land very sparsely settled. With an immense foreign population all crowded and congested in our cities, with our large number of mills and manufacturing plants employing 68,263 operatives, the battle against the Great White Plague is a sturdy one and we are glad to avail ourselves of any assistance that you may give us, and are only too pleased to give you a few suggestions, some advice and perhaps a little criticism from our observations and experiences.

It seems to me that in our fight against tuberculosis, in which hygiene and preventive medicine are gradually and surely winning the day, we have been a trifle hasty and dogmatic in drawing many conclusions, especially in regard to the mode and cause of infection.

To illustrate: we make a great hue and cry about poor air, improperly ventilated mills, dusty and dirty work-rooms,—all of which are to be condemned and should be remedied,—but are they alone responsible to that extent which many physicians and health workers claim?

Are we justified as teachers and medical authorities in claiming that a man, woman, or child working in a mill fifty-six hours a week (the legal hours for Rhode Island) becomes infected or the disease aggravated if we do not carefully consider the remaining one hundred and twelve hours that are left? Honestly, do you not believe that the poorly, ofttimes not even ventilated bed-room occupied continuously from seven to nine hours is a greater source of infection, the breaking down of health, and the starting point, if I may use that word, for the bacilli of tuberculosis to obtain a suitable nidus for their propagation?

In many factories the air is bad, ventilation unknown, sanitary conveniences the least said about the better; yet in our State these are being rapidly improved and in the new mills these points are being carefully considered, because a mill owner knows that healthy operatives can do better and more work, and a healthy corps of

* Read before the American Institute of Homœopathy, at Pittsburgh, Pa., June, 1912.

mill workers is an economic asset for a manufacturing establishment.

In the old days as long as a person would work, not much time, thought, or money was wasted upon the conservation of the health of the employees. Times have changed, and hygienic conditions are as necessary for successful industrial textile results as good cotton, cheap power, and improved machinery.

When we consider the homes of the operatives, the unsanitary dwellings,—if you can call some of the habitations by the name of dwellings,—the poor facilities for bathing, the care of sewerage, to say nothing of the proper closets for personal care, and then add the badly non-ventilated sleeping rooms, generally overcrowded even in the best of conditions, are not these the greatest factors to overcome in combating and subduing the ravages of tuberculosis?

Many tenements are owned by the mills, and it is up to the mill owners to remedy such conditions.

Another factor must also be considered, that is, the poor wages of many of the operatives, making it an impossibility for them to purchase proper nourishing food, clothing and fuel. In one of our leading first-class cotton mills this statement is quoted: "That it is impossible for a man with a wife and two children to earn enough money to support his family and provide the ordinary necessities of life unless either the wife or the children also work in the mill."

Thus again does our arch enemy, tuberculosis, by undermining the health of the operative, overthrow our efforts by raising this economic question.

The dust problem in a cotton mill, especially in certain rooms, is a hard one to overcome. Modern mills with high ceilings, plenty of good sized windows and transoms, thus providing for good circulation of clean, fresh air, with clean sanitary floors and good overhead light where needed, have done a good deal in minimizing the dust evil. When, however, we consider one of the "old timer" mills, low studded, with small, narrow windows, cramped quarters, and no ventilation, then we strike a snag.

You all know it is an expensive undertaking to reconstruct an old building, and even when finished, you are often nearly as badly off as at the start; or, as the contractor puts it, it is far cheaper to tear down and rebuild; yet there are few corporations who could or would afford the financial outlay for such a demand. Therefore we must make the legal qualifications or building laws for new mills firm enough so that we may be assured of a clean, well ventilated, hygienic mill, with healthy operatives, trusting it may so improve that mill's goods that the demand for its textile products will be so persistent that it will compel the old traps to go out of business or else brace up and get up-to-date.

Mill inspection must be carefully done and owners must be compelled, legally if it is necessary, to keep their plant clean and well ventilated.

Humanity requires and demands cotton goods, and this supply and demand must be met. Raw cotton as it comes in the bale is dirty, dusty, and more or less mixed with extraneous matter, and it is necessary to thoroughly pick over, clean and comb the cotton before we can make the thread. This work is done by a number of ingenious machines thoroughly covered to prevent as much as possible dust flying about; yet these rooms are filled with a certain amount of fine, fluffy, irritating dust, the amount depending a great deal upon how the room is ventilated.

In the picker room, where the cotton is started in order to thoroughly pick it over and mix it, only four men are required to keep an entire plant employing two thousand operatives supplied with cotton. This is indeed a fortunate thing as far as dust infection is concerned. In the carding room, where the second process of cleaning the cotton is carried on, only sixteen men were employed, and I believe here infection could be reduced by compelling the operatives to wear a respirator, a wire mask fitting over the mouth and nose in which is a damp sponge or wet piece of gauze, acting as a strainer to the inspired air and removing the dust. This respirator should be made legally compulsory, as the operatives in this room would not use them unless compelled so to do. This room should be swept by a vacuum cleaner, and I believe that the whole mill should be swept in the same manner. It is surprising that the vacuum or suction method of sweeping has not been carried out in the mills. If the vacuum machine could not be used while the machinery is in operation, then the sweeping could be done at the noon hour or the machines stopped. The latter suggestion, stopping a part of the machinery, would cost money, reduce the day's output, and probably would not favorably impress the mill owners; but dust infection, tuberculosis and sickness cost not only money but human lives and make disease rampant in our textile cities, towns and villages.

In Pawtucket, a large manufacturing city, we have had under the care of the district nurses an average of 110 tuberculosis cases for the last three years. Taking the last eighty-three cases reported, I observed the peculiar fact that thirty-two were mill employees; twenty-one were weavers, four were spinners, three spoolers, three carders and one was a laborer. Sixty-six per cent. were weavers. To many of you who are not acquainted with mill work this may not mean anything, but, as I have shown you, the picking and carding rooms are the dustiest in the mill, and here we have a tremendous preponderance of cases in the best, well lighted and cleanest room

with a small amount of dust. The highest class of help and certainly the best paid employees are in the weave shed, and so economic conditions cannot be attributed as the chief cause of the increased prevalence of phthisis pulmonalis amongst the weavers.

In referring to the latest published vital statistics of our State for 1909 we find that Rhode Island had 947 deaths from tuberculosis, of which 781 were from phthisis pulmonalis. Two hundred and thirty-six mill operatives died during this same year, exclusive of laborers whose places of occupation were not given, so we have no means of knowing whether they were employed in mills or not, and of this number 57, or 23 per cent, died of tuberculosis. In 1909 72 weavers died, and of this number 26, or 36 per cent, died of tuberculosis.

Without doubt, the chief method of infection of such a large number of weavers is the use of the old style shuttle. This shuttle is threaded by sucking the thread through the eye of the shuttle by the mouth and lips, and it has been aptly called "the kiss of death." When you consider that weavers are threading these shuttles as often as every two or three minutes, and while they may be using for a certain length of time the same pair of shuttles on their looms, yet, in using different threads of different sizes, material, or color other shuttles may be required; or the operative may be out for a day and another weaver takes up the work and thus the shuttles are used indiscriminately and by anyone, whether he is sick or well, is it not a miracle that the whole number of operatives in that room are not infected with tuberculosis, to say nothing of syphilis? It is disgusting, dirty, and filthy, and if in our mill talks, instead of spending all our time advocating individual drinking cups, pencils, towels, and pipes, we laid strong emphasis upon the use of the modern self-threading shuttle we would show great gain in the overcoming of the Great White Plague amongst the weavers and textile workers. A number of the states have a shuttle law, and the following Statute was passed in Massachusetts this year:

AN ACT TO PROHIBIT THE USE OF SUCTION SHUTTLES IN FACTORIES.

SECTION 1. It shall be unlawful for any proprietor of a factory or any officer or agent or other person to require or permit the use of suction shuttles or any form of shuttle in the use of which any part of the shuttle or any thread is put in the mouth or touched by the lips of the operator. It shall be the duty of the State Board of Health to enforce the provisions of this act.

SECTION 2. Violation of this act shall be punished by a fine of not less than fifty dollars for each offence.

SECTION 3. This act shall take effect on the first Monday of May in the year nineteen hundred and twelve: but if the proprietor

or manager of a factory shall, in good faith, show to the State Board of Health sufficient reasons for its inability to comply with the provisions hereof at the time when this act is to take effect, the said Board may, in its discretion, grant a reasonable extension of time in which the said factory shall comply with the provisions hereof. (Approved April 13, 1911.) In our State we have had introduced for two years a Shuttle Law, but it has been lost in the shuffle. Changing the shuttles costs a mill owner a large sum, as many mills have over 4000 shuttles, but tuberculosis costs not only *money* but *misery, sorrow, poverty,* and *human lives.* We must have a statute compelling the use of the improved shuttle for two reasons,—first, to compel the mill owners to make the change, and second, (strange that it should be necessary) to compel the weavers to use the new shuttle. It is the perversity of human nature, which, I think, is the experience of those engaged in public health work, that it is very difficult to get employers and especially the employees who are to receive the greater benefit, to adopt any new method of doing their work, as, for instance, the phosphorous match and the shuttle. Labor demands many things and gets a good many, yet the old shuttle keeps up its deathly kiss. As custodians of the public health it is our duty to push this shuttle law in every State in the Union, not only reducing the infection amongst weavers but also reducing the danger of the infected weavers from infecting their families and thus infecting the community at large.

We are winning in our battle against tuberculosis, and here is a grand opportunity to spike one of the big guns of our elusive, insidious enemy.

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M.D.

Case IX.—Diagnosis: Pulmonary Embolism.

This diagnosis was made at autopsy. The embolus proved to have broken off from an extensive thrombus in the iliac vein.

The autopsy record reads: "Upon opening the pulmonary artery a mass of clotted blood 8 c.m. in length is found completely occluding it and apparently lodged at the bifurcation. This mass is distinctly rounded; the surface finely granular. Upon tearing it apart it is found to be of somewhat organized material. A large amount of blood is present in the right side of the heart, all of which is in a liquid condition. A considerable amount of blood is also present in the lungs beyond the clot just described, all of which is liquid."

"Lungs: largely collapsed. Right lung: on the inner part of the lower lobe are numerous punctate sub-pleural ecchymoses.

"Liver: unusually large and contains an abundance of dark and non-coagulated blood."

After the operation the case progressed so favorably that the sudden unfortunate termination came as a great surprise and shock. Before autopsy it seemed fairly positive that it was the result of angina of which the patient had had many attacks, some of them very severe and persistent.

One occurrence, in the light of the autopsy, might have suggested the correct diagnosis,—namely, that seven days after the operation the patient had a sudden severe pain in her right chest with a sharp rise of temperature to 103. The cause was obscure at the time but it was supposed to be due to a transient pluritis, although there were no definite signs on which to hang such a diagnosis. The temperature subsided in twenty-four hours. This pain was evidently due to a small embolus.

In an interesting editorial in the Journal of the American Medical Association for September 7, 1912, entitled "Thrombosis and Embolism after Operations for Appendicitis," the editor makes the following comments on a paper by Dr. Bull. The latter observed thrombosis in twenty-two out of one hundred and eighty-eight operations for appendicitis. Of these, fifteen had secondary pulmonary emboli with two deaths. The time of operation in relation to the attack seems to have no bearing, nor does the presence or absence of sepsis. Most cases occurred after the age of thirty and in women far oftener than in men. Whether thrombosis had started before operation could not be said. "The most important signs and symptoms of post-operative thrombosis are a slight irregular rise of temperature without manifest cause and mild general distur-

bance. There may be no reliable symptoms until pulmonary embolism suddenly throws light on the situation." "The symptoms caused by medium and small emboli lodging in the lungs are in general, pain in the precordium or epigastrium, one side. or back, depending on the place of lodgment, associated with more or less uneasiness, dyspnea and rise of temperature, followed by hemopysis if hemoragic infarction develops, in which case certain evident physical signs are usually present." "The most obscure phase of post-operative thrombosis is its etiology unless one accepts the view, now so prevalent, that it always results from infection." "Bull discusses this aspect of the subject fully."

"He reaches the tentative conclusion that post-operative thrombosis may result without infection and that the underlying conditions are largely of a mechanical nature, the evident result being interference with the circulation of blood in the veins."

"From this it is evident that bandages and positions that tend to restrict the circulation in the veins most often affected (femorals and iliacs) should be avoided so far as possible. The necessity for absolute quiet when there is danger of embolism is self evident."

The neurological aspect of this case is as difficult to discuss as it was to treat. The patient was just an incorrigible and did not fit into any definite nosological group. For the most part of sweet, amiable disposition, she was so rapidly changeable and unstable that no dependence could be placed upon her promise and constant watch had to be placed upon her. Without apparent provocation she would fly into a rage, be extremely profane and even destructive, yet retain complete insight into the significance of her acts and afterwards be very penitent. For the past year she would use alcohol and tobacco to excess, periodically and deliberately violate the social code of the circle in which she moved. Evidently there was something radically wrong with her ethical sense and her will. Attention, too, was disturbed for she went from one thing to another and was very restless. Reasoning backward, it was evident that her interest was elsewhere and that this shifting of attention was an attempt to find an acceptable substitute as satisfying as the thing she desired, namely, a Bohemian life. It is a fair guess that this was due to a beginning dementing process secondary to the meningitis which she had at seven years of age, an inflammatory process which at the time did not reach into the cortex but so crippled the pia and arachnoid that it failed to supply the nutrition for a symmetrical maturing of the "association mantle" and thus allowed the more fundamental animal brain inside to mature in advance. The patient had a very

childish countenance and had not been able to acquire the usual degree of education of her class.

This opens up the interesting question of the relation of disease to criminality.

Case X.—For Diagnosis.

This patient is a boy of nineteen years, of Canadian (English) parentage. His family history is of little moment, except that he does not come of vigorous stock.

He presents himself for treatment for a severe pain in the region of the stomach. Has a sensation as if food wouldn't move out of the stomach. The pain is worse shortly after eating and at night and is of a tearing, pulling character. He is very stubbornly constipated and has night sweats; no vomiting. At school he repeated the first and the sixth grade and never went beyond the eighth which he had reached at sixteen, when he went to work.

His indigestion began about a year ago, and in December, 1911, he had to give up work on account of pain. He obtained temporary help from drugs but was miserable until June, 1912, when he went to the country, where he improved somewhat but still had "bad days." In August he went to work in a shoe factory but soon got worse; gave it up and got work out of doors. But the pain got still worse and the last of September he had to quit. At that time there would be a week or so of severe pain in the epigastrium, of a tearing, dragging character, and he would go to bed and apply heat. After a week a remission would occur for perhaps a week or more.

Physical examination: A small, thin boy of pink and white complexion and a very red, almost scarlet color, covering both cheeks and extending to ears and temples. Has a simple mind and slow drawling speech. The pupils are normal to light and accommodation; eye movements normal but a suggestion of course nystagmus to left in left eye. No cranial nerve involvement; Tongue coated on back, red tipped. Station and gait good; no Babinski. Knee jerks present on reënforcement. The peculiar phenomena of crossed knee jerk is present, when right knee is tapped the left quadriceps contracts and vice versa. Superficial reflexes slightly increased. Blood pressure, diastolic, 122, systolic, 90. Heart sounds weak; apex in sixth interspace; pulse 60. Whispering bronchatory at both lung apices. Abdomen sore to pressure, especially the left epigastrium, and the muscles of this region are too rigid to permit of proper palpation. Stethoscope over pylorus shows stomach to be emptying about every five seconds. The urine and blood show nothing of interest.

What things would have to be considered in this case and which one of these is the more probable?

From Dr. Sutherland's lecture: For every Kilo (2.2 lbs.) of body weight man should eliminate 1 gram of Solids divided partly as follows.

Urea	50	per cent.
Chlorides	25	per cent.
Phosphates	12½	per cent.

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten —personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business, should be sent to the Business Manager, 422 Columbia Road, Dorchester, Boston, Mass.

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AN APPRECIATION.

The special Psychiatry number (September 1912) of the *New England Medical Gazette* is by far the most pretentious issue ever attempted in all the forty-seven years of the *Gazette's* existence. Besides its two hundred and fifty pages of original matter it contains forty-five pages of splendid half-tone illustrations, mostly of microphotographs of nervous tissues.

That Dr. Adams was able to gather about him men and women capable of producing such a tribute to him is in itself the best evidence of his own ability to judge character and capacity.

The monumental work of collecting the material for this number and much of the proof-reading was undertaken by Dr. Solomon C. Fuller, and he was most generous of time and effort. The editors of the *Gazette* desire to express here their appreciation of and gratitude for his co-operation and his untiring interest and aid in making the number all that could be desired for it. It was a heavy task for all, but to Dr. Fuller especially fell the task of assembling the contributions and keeping authors up to time,—an especially thankless undertaking in the vacation season when most of us feel that we are, or should be, off duty and exempt from any but the most pressing claims upon time. The editors feel that in this number the *Gazette* has achieved a distinct success and that its great value as a literary and scientific publication was largely due to Dr. Fuller's efforts.

ALIEN MANIACS.

When the solicitor of the Department of Commerce and Labor refused to issue a warrant for the arrest and deportation of an alien suffering from maniac-depressive insanity he left wide open the door for the entrance of such assassins as Czolgosz and Schrank, and later when Secretary Nagel of the Emigration Bureau permitted Rewke Palayes, an eleven year old imbecile Russian girl, to land on our shores on the flimsy plea that she was a United States citizen because her father, who had preceded her by some years, had become

naturalized, he not only opened the door still wider but put a brick against it to keep it open.

This is the day when in medicine, at least, the emphasis is placed more upon prevention than upon cure. If we are in any measure to prevent creatures of unstable minds from attempting the murder of our foremost citizens the prevention lies, not in a heavy body-guard, nor in the deterrent effects of capital punishment, but rather by prohibiting the landing of any alien, be he prince or pauper, who has shown the slightest tendency from his infancy to the hour of emigration to any mental disorder, imbecility, or even a fanaticism born of warped judgment. We should go even further and exclude or deport all aliens whose immediate parents show unmistakable signs of mental instability.

It is all very beautiful to talk about assimilation, but the stomach which in its unwise generosity or greed (whichever it may be) attempts to digest, preparatory for assimilation, knives, revolvers, bludgeons, or dynamite, finds all too soon that it has not only failed utterly to digest such "food," thereby rendering assimilation impossible, but it has got itself punctured full of holes and is good only for the scrap heap.

America extends the glad hand to all *desirable* aliens of whatsoever country, creed, or color, but when in her unwise hospitality she allows her laws to be so misinterpreted and maladministered that Europe, Asia, and Africa can dump their imbecile infants, idiotic children, frenzied fanatics, and murderous maniacs unchecked upon her shores it is time she put a barrier high as the heavens above, emblazoned with the inscription which all the nations of earth may read, "America wants only sane citizens."

Were we to judge of this menace only by the outcropping of attempted assassinations here and there by the "poor creatures" of the Schrank type we might think the instances were too sporadic to justify such a conclusion; but the statistics of our State Institutions for the Insane will quickly dispel any such hope. The New York State Commission in Lunacy in its last report called especial attention to the alarming increase of alien insane admitted to its hospitals. This report, rendered the legislature February 14, 1912, showed there were 33,311 committed insane patients in State institutions. Over 25 per cent of these were aliens who had come over as emigrants through Ellis Island. New York State is today caring for 8000 insane aliens who never would have landed on our shores had our laws been stringently interpreted and rigidly executed. The feebleminded and backward children in our public schools come largely from the immigrant population.

In 1911 the Public Education Association of New York State obtained the history of 317 mentally defective school children

selected at random from thirty-two ungraded classes. *All but forty of these were of foreign parentage.* It is estimated on sound statistical evidence that 30 per cent of the feeble-minded children of the United States are the progeny of alien or naturalized citizens. According to Mr. W. T. Salmon of the New York State Board of Alienists, one out of every 250 aliens landing at Ellis Island is committed to a physchopathic State institution within one year.

It is a well known fact among insanity experts that maniac-depressive insanity or delusional insanity depends more than does any other disease on constitutional psychopathic tendencies and a certain mental instability. In other words, this particular form of insanity gives warning of its possible approach by constitutional signs which can be read almost unmistakably when the entire history of the patient is known. The evidence so far goes to show that Schrank was suffering from delusional insanity. His history so far as obtained gives unmistakable evidence of a constitutional instability which he exhibited in Bavaria as a child. Yet he was admitted to this country sixteen years ago as a normal individual. Upon whom does the responsibility rest? It rests first upon the officials who interpret and administer our immigration laws. When such dangerous decisions as quoted in the opening paragraph together with such as recently rendered by solicitor Charles Earl and approved by Attorney-General Wickersham, our protection against this dangerous and expensive class is absolutely nullified. The law specifically states that if an alien becomes insane within three years after landing, from causes existing prior to landing, he shall be deported.

An alien girl seeking admission to this country was reported by a commission of experts to be insane. Yet she was admitted. Within three years she was committed to a State hospital for the insane. When an attempt to deport her was made on the basis of the original report, the solicitor of the department of commerce and labor, backed by the Atty-General, decided (Jan. 11, 1912) that there was no "affirmative fact available tending to show that such constitutional psychopathic tendencies and mental instability existed prior to landing." In other words, they constituted themselves, unsupported by a word of expert testimony, as insanity experts and decided that the maniac could not be deported. Under such a ruling what is to hinder any inflammable, unstable minded Czolgosz or Schrank from landing and beginning shooting at once?

The second weak point in our immigration department is pointed out by William Williams, Commissioner of Immigration of the Port of New York, that insufficient time and facilities are afforded the examining physicians for determining the mental condition of aliens. He says Congress has persistently refused appro-

priations asked by the Commissioner to enlarge and improve the medical division of Ellis Island.

The public conscience should be fully aroused to this burden and menace of admitting the unstable minded alien, a burden in caring for a vast army of defectives, and a menace in harboring in our midst the delusional maniac who may under the provocation of excitement or a "vision" send the assassin's bullet into the heart of our Chief Executive.

OBITUARY.

John Black McClelland, M.D.

On the fourth day of August, 1912, within one year of man's allotted three score years and ten, the soul of our fellow member, John Black McClelland, entered that silent bourne from which no traveler returns.

He gave four years of his early life to the loyal defense of his country; he gave thirty-three years of his life to the successful practice of homœopathic medicine, and was one of its most ardent, consistent and conscientious practitioners and defenders. He gave every year of his life to upright, conscientious and clean living.

His was a strenuous and intense nature, an original and forceful intellect and a positive and dominant will.

In the death of John Black McClelland this Society recognizes that it has lost one of its most earnest and valued members, that Homœopathy has lost a true, able and ardent advocate and exponent; that the State has lost a conscientious and faithful physician; and that society at large has lost a clean and Christian citizen; and as this Society laid its flowery meed of sorrow and sympathy on his bier, it directs that his life and character be spread upon its records, and transmitted to the surviving members of that trinity of medical brothers, so long members of this Society.

H. B. Bryson, M.D.
F. C. Sawyers, M.D.
E. R. Greggs, M.D.
Committee.

Allegheny County Homœopathic Medical Society, Pittsburgh, Pa.

SOCIETIES.

Massachusetts Homœopathic Medical Society, Boston Section.

The regular monthly meeting of the Society was held on Thursday evening, October 3, 1912, at the Evans Memorial Building. The meeting was called to order by the President, Charles T. Howard, M.D. In the absence of the Secretary, the reading of the records of the last meeting was omitted.

Program.

I. Board of Health Problems, by Wesley T. Lee, M.D., Chairman of Somerville Board of Health.
II. Medical Examiner Experiences, by Timothy Leary, M.D., Medical Examiner, Suffolk County.
III. Some Causes of Sudden Death, by Wm. H. Watters, M.D., Asst. Medical Examiner, Suffolk County.

Upon motion of Dr. H. P. Bellows, Dr. Leary was given a rising vote of thanks for his very interesting talks which will appear in a later issue of the *Gazette*.

Vermont Homœopathic Medical Society.

The 62nd semi-annual meeting of the Vermont Homœopathic Medical Society was held in the parlors of the Berwick in Rutland, on October 8. The only formal business to come before the meeting was the reading and

approval of the minutes of the last annual meeting. Dr. Geo. E. Morgan, whose application for membership had been approved by the Board of Censors, was elected a member.

Dr. Frank C. Richardson, of Boston, was present as the guest of the Society and spoke upon "The Present Trend of Medical Practice towards Curative Means other than Drug Therapy." The address was an able and interesting one along lines comparatively new to the general practitioner, and all expressed the desire that they might have the pleasure of hearing him again some time. The remainder of the time was taken up with the discussion of the two subjects, Grippe and Dysmenorrhea. The etiology and symptomatology of grippe was presented by Dr. F. B. Clift of Fair Haven, its homœopathic treatment by Dr. E. I. Hall of Rutland, its complications and sequelæ by Dr. F. H. Everett of Castleton. The etiology, classification and symptomatology of Dysmenorrhea was presented by Dr. W. G. Hodsdon of Rutland, its homœopathic treatment by Dr. C. A. Gale of Rutland, its mechanical and surgical treatment by Dr. Sam Sparhawk of Burlington, its electrical treatment by Dr. Geo. I. Forbes of Burlington.

The next meeting will be held in Burlington on the fourth Wednesday in May, 1913.

American Surgical Association.

The American Surgical Association has appointed a Committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntingdon, San Francisco, California; John B. Walker, New York City; Edward Martin, Philadelphia; and John B. Roberts, Chairman, 313 S. 17th Street, Philadelphia, to report on the Operative and Non-operative Treatment of Closed and Open Fractures of the Long Bones and the value of radiography in the study of these injuries. Surgeons who have published papers relating to this subject within the last ten years will confer a favor by sending two reprints to the Chairman of the Committee. If no reprints are available, the titles and places of their publication are desired.

John B. Roberts, Chairman,
313 S. 17th Street, Philadelphia.

BOOK REVIEWS.

Pharmacology. Action and uses of drugs. By Maurice Vejux Tyrode, M. D., formerly Instructor of Pharmacology at Harvard Medical School. P. Blakiston's Son & Co., Philadelphia, Price $1.50.

This small handbook of some two hundred and fifty pages is an admirably arranged treatise on the present day pharmacology of the "regular" school of medicine, containing, besides a concise description of the drugs of which it treats, many valuable hints on the therapeutics of a considerable proportion of these substances. The most striking feature of the book is its simple and systematic plan whereby one can obtain almost at a glance a comprehensive idea of any part of its contents. Among other interesting definitions and concise statements, the following is selected as especially noteworthy to the student of materia medica having the homœopathic point of view. "A drug is any substance other than a food stuff or a mechanical agent which produces change in a living organism."

Clinical Guide. By George Frederick Laidlaw, M.D., Professor of the Practice of Medicine; Visiting Physician to the Flower Hospital; Visiting Physician to the Metropolitan Hospital. Boericke & Runyon, New York, 1913.

This is truly rightly named "Clinical Guide" which may be used by the physician for ordinary purposes. The book is intended to give the result of the author's wide experience with various laboratory methods for diagnosis.

The first chapter gives the result of the author's experience with various tuberculins in diagnosis and treatment. Concise directions are given for a

simple method of preparing the dose and administering the more useful tuberculins. The author believes that this is the first appearance in the English language of Professor Denys' technic and rules for the use of bouillon filtre. A unique feature of the book is the Glossary of Tuberculins, in which each of the many tuberculins is described and its usefulness indicated.

In the chapters on urine, gastric contents, blood, sputum, smears and typhoid diagnosis, only simple, accurate and practical tests are given. The author has used them hundreds of times. They are in daily use in his office.

The final chapters include the author's experience with diagnostic puncture, the Kronig and the Goldscheider percussion, auscultatory percussion, the oral auscultation of Takata, the use of thiosinamine, the use of the rectal bougie, test diet for diabetes, specimen records and such data as a student or a physician attending a post-graduate course in clinical medicine would copy into his note-book. To save hunting through various books and journals, the author copied most of them long ago into his own note-book. Some of them are not yet available elsewhere in English.

The Practice of Medicine. A Manual for Students and Practitioners. By Hughes Dayton, M.D., formerly of the Cornell University Medical School, New York. New (2d.) edition, thoroughly revised. 12mo., 326 pages. Cloth, $1.00 net. The Medical Epitome Series. Lea and Febiger, Publishers, Philadelphia and New York, 1912.

A very useful little book for quick reference and condensed information. To the student who is preparing for examinations and desires to refresh his memory in the pathology, etiology and treatment of disease, and also to the physiclan who is looking for some confirmation or information on these lines, the book is a "very ready help in time of trouble."

Surgery of the Genito-Urinary Organs. By J. W. S. Gouley, M.D. Rebman Co., New York. Price, $3.00.

A small volume of 500 pages, well printed, but with very few illustrations. It contains nothing especially new on the subject of genito-urinary disease, but consists largely of the author's experience in this line of work. He has taken much pains in detailing his method of operating, which is very valuable to one taking up this line of work. The chapter on "Retention of Urine in Elderly Men" is exceptionally good. The work is thoroughly practical, devoid of all theorizing, and well worth a careful study for those who are to follow this line.

Diseases of the Stomach, Intestines, and Pancreas. By Robert Coleman Kemp, M.D., Professor of Gastro-intestinal Diseases, New York School of Clinical Medicine. Second edition, revised and enlarged. 8vo of 1021 pages, with 388 illustrations. Philadelphia and London: W. B. Saunders Co., 1912. Cloth, $6.50 net; Half Morocco, $8.00 net.

Our understanding of the physiology and pathology of the stomach and intestines has been materially changed and enriched since the advent of the radiographic cinematograph. In fact, the change has been so radical that much of our treatises upon these organs must be rewritten.

This work of Kemp's is the last word upon the medical and surgical treatment of the digestive organs. Naturally he has taken advantage of this new-found knowledge, and produced a work of great value to the profession. The chapters upon the anatomy of these organs, and the physiology of digestion, are well worth reading, however much one may have known, or thought he knew, about the matter. Under the head of treatment are comprehensive chapters on diet, stomach lavage, and massage, but not a word on internal medicine. One might justly conclude that no drugs existed which would in any degree ameliorate the suffering produced by diseases of any of the digestive organs.

His book would have been a marvel of completeness and finish, had he al-allowed a homœopathic physician to write a chapter, "Remedies for Stomach and Intestinal Diseases."

Genito-Urinary Diseases and Syphilis. By Henry H. Morton, M.D., Clinical Professor of Genito-Urinary Diseases in the Long Island College Hospital, etc. Third edition, revised and enlarged. Published by F. A. Davis Co., Philadelphia. 1912. Price, $4.00. An 8vo volume of 600 pages. Profusely illustrated.

While this is a work more particularly for the specialist in surgery, or in genito-urinary work, yet there are many chapters in it which the general practitioner would find almost indispensible in studying up certain phases of diseases peculiar to these organs. Any work on syphilis written prior to the discovery, cultivation and inoculation of the spirochœta pallada and the Wassermann reaction, together with the Salvarsan treatment, is like the play of Hamlet with Hamlet left out. In fact it is obsolete as a book on treatment.

This new edition of Morton brings the pathology and treatment of syphilis down to the latest moment and is a dependable working treatise.

Pathology and Treatment of Diseases of Women. Fourth edition, rewritten by A. Martin, Professor und Direktor, and Ph. Jung, Professor und Oberarzt der Universitats-Frauenklinik in Greifswald. Only authorized English translation, written and edited by Henry Schmitz, M.D. New York, Rebman Co., 1123 Broadway.

The medical profession is indebted to the publishing house of Rebman Co., New York, for the many excellent German translations which it has given us on subjects of general medicine and surgery. One of the last to be presented is this volume of Martin and Jung, translated by H. Schmitz of Chicago. It is really more a reference book on gynecology than a treatise, and because of that, it has its place as a condensed, concise work for the man who merely desires to acquaint himself with the newer methods of treatment, and especially the German methods. The paper and type are good, but the illustrations are not quite up to American workmanship.

Nutritional Physiology. By Percy G. Stiles, Assistant Professor of Physiology in Simmons College; Instructor in Physiology and Personal Hygience in the Massachusetts Institute of Technology, Boston. 12 mo. of 271 pages, illustrated. Philadelphia and London: W. B. Saunders, 1912. Cloth, $1.25 net.

Conservation seems to be the word upon which all progress and reform of today rest. Professor Stiles says, and truly too, "We have every reason to believe that the principle of the conservation of energy holds as rigidly for the plant or the animal as for the clock or locomotive." That is the keynote to this work, to so teach the principles of physiology that we shall know how to conserve all those forces and elements which go to make up bodily vigor. While we cannot say there is anything especially new in the work, yet the old is presented in such attractive form, and is so well pruned of unnecessary verbiage, that it holds the interest of the reader, be he scientist or layman, throughout the book.

Materia Medica and Therapeutics, etc. By Reynold Webb Wilcox, M.A., M.D., LL.D. Eighth Edition, Revised; with index of symptoms and diseases. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. 1912.

Dr. Wilcox needs no introduction to the readers of medical works. Anything which he writes bears the seal of genuineness, especially if it be a work on practice or materia medica. Few men are better qualified to write upon the subject of old school therapeutics than is Dr. Wilcox, because he knows the subject from a lifelong experience, enriched with a large hospital and general practice. The work is put up in a handy volume of convenient size, is well indexed, and full of drug information.

MEDICAL JOURNAL REVIEWS.

American Journal of Surgery, October.

1. *Etiology of "Gall-bladder Disease."* Hacker, C. W. L.

Gall-bladder disease is of hæmic origin, bacteria have been found to pass through the intestinal mucous membrane, such are carried by the portal system even by an indirect route t othe gall-bladder. Extension from the liver or duodenum due to continuity of tissue is rare. The harmful bacterial flora of the duodenum is limited due to the bacteriacidal action of the gastric juice, and the flow of bile is toward the duodenum. Any condition of lessened peristalsis with resulting intestinal stasis and constipation facilitates the passage of bacteria through the inner coat of the bowel and entrance of bacteria into the portal vessels, hence gall-bladder disease is caused by and is not coincidence in constipation.

Cholecystitis of typhoid occurs from passage of typhoid bacilli via the portal system from the lymphatic patches in the ileum to the gall-bladder. The gall-bladder is the chosen habitat of the typhoid bacillus, frequently without symptoms for an indefinite period. Cholecystectomy in a functionally destroyed gall-bladder even years after typhoid is a means of removing a focus of danger to the patient as well as to the community in eliminating a typhoid carrier.

H. J. L.

2. *"Sponge Compression in the Treatment of Mammary Abscesses."* Dearden, J. E.

Primary sub-mammary abscess is rare, necrosis of a rib or an empyema are its cause, elevation of the mammary gland which is not reddened occurs. 672 out of 813 published cases of mammary abscesses occurred during lactation. Entrance of abscess producing micro-organism takes place through the nipple, the milk and body temperature are ideal conditions for its growtn. Erosions or fissures facilitate the lodgement of the staphylococcus aureus cleanliness and the application of nonpoisonous antiseptics to the nipples are prophylactic to lacteal duct infection. Mastitis preceding pus formation requires evacuation of the ducts and secreting portions of the gland with the breast pump. Evacuation of fluctuating abscesses followed by even firm pressure applied by a binder with a large bath sponge previously cleaned by thorough washing and soaking in dilute carbolic acid. The sponge is squeezed as dry as possible in a towel and interposed between the binder and breast. Sponge compression is applicable only to drained, recent, single abscesses and not to those breasts with multiple and branching abscesses and sinuses.

H. J. L.

North American Journal of Homœopathy. October, 1912.

Feeding at the Breast. Greene, C. R.

Treatment of Typhoid and Paratyphoid Fever. Butler, Alice.
See remarks in review of Clinique, Sept. 1912.

Stereoscopic Skin Clinic. Bernstein, R.

The Crime against Physical Therapeutics. Grubbe, E. H.
The author urges that physical therapeutics be given a more prominent position in the curriculum of medical schools.

Epithelioma of the Tongue. Gould, W. A.

Acute and Chronic Indigestion. Burt, C. E.

Preparatory and Post Operative Treatment of Carcinoma. Guild, W. A.

The Journal of Ophthalmology and Oto-Laryngology, October, 1912.

"The Giant Magnet in the Extraction of Foreign Bodies from the Eye." Willis O. Nance, M.D., Chicago.

"It seems unnecessary to impress upon the attending surgeon the necessity for early removal of the foreign body from the eye. Besides the greater danger of infection it must not be forgotten that a foreign body remaining

for any length of time in the eye becomes encysted and thereby greatly adds to the dangers and difficulties of removal. In a case where the probability is that the eye contains a piece of steel, the sooner the patient comes under the care of the ophthalmic surgeon the better.

"With a skiagraph one learns something of the size of the foreign body and its approximate location, points which have just been alluded to which so materially aid us in operating intelligently. Besides, in a certain proportion of cases the question arises as to whether a foreign body exists in the eye or not. We all know that a flying missile may strike the cornea with sufficient force to perforate that structure and then glance off. In such a suspected case it is far better surgery to have a skiagraph taken rather than to employ the magnet for diagnostic purposes, for if a magnetic body should happen to be in the eye we may do great damage by forcibly pulling the body blindly about.

"In connection with the subject under consideration, I have but to remind you of the dangers of foreign bodies which are retained in the vitreous as a cause of "sympathetic" disease. It is safe to say that a large proportion of cases of sympathetic uveitis occur in eyes in which a foreign body exists in the injured eye. Since the magnet came into general use cases of this kind have diminished materially."

The Journal of Ophthalmology, Otology and Laryngology, October, 1912.

Fischer's Colloid Acidois Theory of Glaucoma.

"This theory, without doubt, is one of the most important contributions to our knowledge of glaucoma; it is practical and not inconsistent, but has not yet been satisfactorily shown to be the underlying cause of all cases and all kinds of glaucoma.

"Based upon experiments on the absorption of water by fibrin and other colloids, and upon increased ocular tension of fresh sheeps' eyes immersed in fresh water and in solutions of acids and salts, Fischer holds that the increased tension of glaucoma—like the edema of nephritis—is attributable to increased absorption of water by the tissues of the eye, due to chemical changes (acidosis) within the eye which increases the affinity of the ocular colloids for water.

"Clinically, 5 to 15 drops of a 4.05 per cent. (⅛ molecular) solution in mild cases or for subsequent treatment in others, and the same amount (enough to gently distend the connective tissue) of a 5.41 per cent. (1-6 normal) solution in severe cases of glaucoma are injected under the conjunctiva with a fine hypodermic needle. Chemically pure sodium citrate must be used. Fischer precedes this injection with cocain and adrenalin, others use acoin or alypin; the pain, which is sometimes severe, is relieved with alternate hot and cold compresses.

"The ⅛ normal molecular solution has an osmotic pressure below that of the human tissue fluids, the 1-6 molecular one that is slightly above. This, entirely harmless, is always followed promptly by a fall in the ocular tension which is appreciable in ten minutes and may reach sub-normal. The effect-relief of all subjective symptoms (except structural blindness) lasts three to six days or even more.

The Ophthalmic Record, October 1912.

"Burns of the Eyeball from the Contents of So-Called 'Water-Core' Golf Balls" By Casey A. Wood, M.D., Chicago.

"That the resiliency and 'carry' of golf balls may be increased many devices have been employed. Among them is the winding of rubber ribbons or strands about cores that differ materially from the body of the ball. Among these are bags filled with air, with water and with solutions of various kinds. At first (probably as an experiment) some cores were of pure water, but more recently 'acid' and other heavier fluids have been employed, on account of their resilient qualities, their weight and their effect on the rubber and other constituents of the golf ball. Whatever their character, there can be no doubt about the highly cauterant quality of most or all of these solutions.

"The cores of golf balls, whatever their constituents, are surrounded by machine-wound ribbons or other material and thereby subjected to great pressure. It follows that when burst or cut open any fluid they contain is expelled, sometimes with explosive force and noise, to a considerable distance. These preliminary statements will explain the following accident:

"On the evening of Sept. 7th, 1912, I saw C. K., aged 26, who a few hours before cut into a golf ball of unknown manufacture 'to see how it was made.' Without warning a thickish fluid squirted into his face and left eye. There was immediate pain in the eye, a burning sensation about the orbit and the lids were soon swollen shut. Cold compresses and atropia were ordered by Dr. F. P. Patton, of Glencoe, Illinois, and the patient advised to consult me.

"The lids were œdematous and discolored. Irritated patches, evidently burns, were noticed over the whole face and the patient showed similar areas on his hands—as well as discolored spots on his clothes—from the ejected fluid.

"Both the ocular and palpebral conjunctivas were swollen and hyperemic; in two situations there was subconjunctival hemorrhages. There was a marked ciliary and scleral congestion. About two-thirds of the cornea was covered by a thin whitish eschar. On the third day, when the patient returned to his home in Milwaukee, vision was reduced to finger counting; there was a beginning slough of the burned area at the upper-inner quadrant of the corneal burn.

"In view of the foregoing facts it is manifestly our duty both as golfers and practical ophthalmologists to discourage the use of so-called 'water-core' balls. The public are ignorant of the dangerous character of their contents, and although their explosion under ordinary conditions of use is rare, yet it is not an uncommon event that persons, impelled by curiosity, cut into them with such disastrous results as have just been described. Furthermore, as a matter of fact, air and solid-core balls, such, for example, as those made by Spalding Brothers, are quite as effective and enjoy even a greater measure of popularity than the dangrous fluid-core balls."

PERSONAL AND GENERAL ITEMS.

Dr. John E. Runnells, B.U.S.M., 1906, formerly Superintendent of New Hampshire State Sanatorium, has been appointed Superintendent of Bonnie Burn Sanatorium, New Providence, Union County, New Jersey.

Dr. Frank E. Allard has removed his office from 373 Commonwealth Avenue to Warren Chambers, 419 Boylston St., Boston.

Dr. S. Perry Wilde, B.U.S.M. 1910, of Hingham, Masachusetts, was married to Miss Clara Stanton Sturtevant of New Bedford, on October 5.

Dr. Harold E. Diehl, class of 1911, B.U.S.M., after a year's interneship in Newton Hospital, has located at 1244 Hancock St., Quincy, Massachusetts

Dr. Albert W. Horr has been appointed assistant in Ophthalmology in Boston University School of Medicine. Dr. Horr is a graduate of the School of the class of 1891.

Dr. Elizabeth A. Brackett, class of '91, B.U.S.M., has removed from Roxbury to 361 Washington Street., Dorchester.

A resident physician is wanted for the West Jersey Homœopathic Hospital, Camden, New Jersey. Board, uniform and salary to the right man. Apply at once to Dr. C. F. Hadley, 3320 Federal Street, Camden, New Jersey.

Dr. Ella G. Smith, class of 1884, B.U.S.M., has retired from practice and is living at Kearsarge, New Hampshire.

The "Lowell Courier-Citizen" in a recent issue had this to say about Dr. G. Forrest Martin of that city:

"Dr. G. Forrest Martin delivered an address on 'Eugenics, or Race Improvement' at Grace Universalist Church on Sunday night, as one of the addresses in the Social Forum series. The church was filled with the largest audience which has assembled there this year at any of the Sunday evening addresses, and it was one of the largest and most interested audiences which ever gathered there.

At the close of his address, Dr. Martin was asked and answered a number of questions relating to the subject which he had discussed. Altogether it proved to be one of the most absorbing addresses of the series which has been given so far." Then followed a four-column verbatim report of the address.

The *Boston Evening Transcript* for November 6 honored the *Gazette* by publishing in full Dr. Wilcox's editorial entitled "Alien Maniacs" which appears in this issue.

Dr. Rudolph Jacoby, Jr., B.U.S.M. 1911, has purchased a house and begun practice in West Medford, Massachusetts. It is rumored that he will not live alone in the new home.

Dr. George W. Butterfield, class of '83, B.U.S.M., has removed from Wakefield to Hopkinton, Massachusetts.

An elderly lady or semi-invalid wishing to be with private Protestant family in a refined home with cheerful and sunny surroundings can be accommodated at 33 Angell Street, near Franklin Park, Dorchester. Diet list followed if desired. References: Dr. Wm. E. Fay, 366 Commonwealth Avenue. Mrs. J. L. Grandin, 461 Commonwealth Avenue, Boston. Telephone, Dorchester 1244-4.

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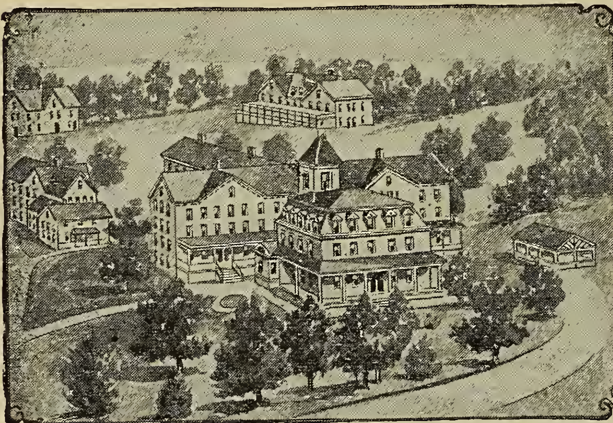

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NOTES AND COMMENTS.

Ten Medical Commandments.

1. Thou shalt not say evil of thy colleagues nor hurt their business.
2. Thou shalt treat thy patients, and not experiment upon them.
3. Thou shalt keep clean thy nails and use much soap and water.
4. Thou shalt be honest to thy patients and not overcharge them.
5. Thou shalt not call every bellyache a case of appendicitis.
6. Thou shalt not worship in saloons nor seek thy friends there.
7. Thou shalt not find bacteria everywhere and in anything.
8. Thou shalt be antiseptic in thy conduct and aseptic in thy practice.
9. Thou shalt not tell every one how great thou art.
10. Thou shalt not advertise in the newspapers, in the market place or in the temple.—*Medical Era.*

On the Fly.

Hubert Latham, the Antoinette flyer, was talking at a tea to a pretty girl.

"Mr. Latham," said the girl, as she took her nineteenth walnut-and-lettuce sandwich, "tell me, does flying require any particular application?"

"Well, no, none in particular," Mr. Latham answered. "Arnica or horse liniment—one's as good as another."

George Ade, with a fellow American, was traveling in the Orient, and his companion one day fell into a heated argument with an old Arab. Ade's friend complained to him afterward that although he had spent years in studying Arabic in preparation for this trip, he could not understand a word that the native said.

"Never mind," replied Ade consolingly. "You see, the old duffer hasn't a tooth in his head, and he was only talking gum-Arabic."—*Cosmopolitan.*

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MEDICAL GAZETTE

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ORIGINAL COMMUNICATIONS.

PSYCHOANALYSIS.*

By George S. Adams, M.D., Givens' Sanitarium, Stamford, Conn.

It is safe to say that no more fascinating method of diagnosis has ever been contributed to the analytical resources of the physician in his investigation of the etiology and nature of departures from the normal in man, than psychoanalysis. Twentieth century bacteriology and pathology in their marvellous identifications of disease agents and products, command the absorbed attention and enthusiastic assiduousness of hundreds of productive investigators pledged "to read the riddles of this mortal frame." But the possibilities and actualities of psychoanalysis in the elucidation of the riddles of this immortal mind pursued of necessity beyond the utmost limits of instrumentation, appeal to and stimulate the physician's highest faculties by means of which, as by no others, he is able to demonstrate that medicine is as truly an art as it is a science.

Hysteria, that hoary enemy of mind and body, provocative of much unparliamentary language on the part of the sorely tried medical adviser, can be credited indirectly with the evolution of psychoanalysis, this new and oftentimes effective method of dealing with its sufferers, and the sufferers from other psychoneuroses.

From the theory of demoniacal possession to that of a wandering or discontented uterus as the cause of hysteria was a long step, but not so long as the distance traversed by Charcot, and the resulting school of Salpetrière, leading to the realization of the psychical nature of its manifestations demonstrable by hypnosis.

* Annual oration delivered before the Massachusetts Homœopathic Medical Society, October 9, 1912.

But in science conspicuously, the discoveries of the past are but stepping stones to greater achievements in the present. Charcot's theory of the pathologic nature of hypnotic phenomena as identical with hysteric phenomena, was superseded by Bernheim's affirmation that hypnosis furnished a new set of phenomena akin to those of normal sleep. So also the theories of Breur and Freud may be said to be more subtly penetrative into the mysteries of the mind, than those of Moebius and Strümpel, while Janet's work, on dissociation as a mechanism alone, has been epoch-making in the realm of psychology.

To Freud we are indebted for psychoanalysis, and to Jung for its complement, the association test. While the basic principles, method of application and availability of psychoanalysis are already well known to specialists, the profession at large is perhaps unaware of the above, or of the fact that psychoanalysis is in itself both diagnostic and therapeutic.

In 1893 Breur and Freud announced that in the course of their investigations of hysteria under light hypnosis, they had found to their surprise, that the individual hypnotic symptom—when traced to its origin, the memory of its cause established, and its effect delivered into consciousness—disappeared and did not return, provided the patient could give a detailed account of the initial incident, and could verbally and fully describe the effective phenomena accompanying and bound up in it.

This discovery led to a close study of the underlying mechanism. Memory as we know is now believed to be continuous and unbroken, while recollection of events and impressions is imperfect and often beyond the conscious will. Now as the body is vulnerable, frequently receiving physical wounds or trauma, so the mind is vulnerable, frequently receiving psychical trauma. Healthy tissues heal, so also the healthy mind. Many things which cause stress and strain, painful impressions, etc., the normal mind fully reacts to, that is, by expressing in one way or another the emotions they evoke, or by readjusting itself to them it disposes of them, digests them one might say, and they are heard of no more.

The absolutely normal mind is a rara avis in the artificial life of the present era. The comparatively normal mind, however, is capable for the most part of acting as has been described; but not so, oftentimes, the mind of the individual handicapped by the neurotic diathesis.

An illustration of the functioning of the latter may be seen in the case of such a predisposed young woman, who falls in love with a young man whose addresses her father forbids her to receive. She fails to readjust herself to this disappointment. In a hazy, indistinct way the thought obtrudes itself that were

her father to be removed the obstacle to the fulfillment of her desires would vanish. She evades this thought, denies its existence as it were, represses it; it is thrust below the threshold of consciousness to the subconsciousness, there to act as a foreign body, a split-off complex, a mischief-making irritant, perhaps associated with other complexes split off in childhood.

Driven back when it would arise to consciousness in its original form, the ignored, censured and censored thought finally manifests itself indirectly in physical and psychic symptoms unrecognized as their source by the patient or the observer.

The name of these symptoms in the host of allied cases is legion. Those who deal with hysteria, neurasthenia, psychasthenia, etc., are ruefully aware of the fact, since the discovery of their true etiology and of their permanent relief has alike taxed expert knowledge and skill to the utmost. Many times the invoking of all resources fails to ensure permanent relief. How welcome, therefore, to every open-minded practitioner-student of the art and science of medicine, must be the offering by a master in the profession, of a new diagnostic and therapeutic measure promising so much of assistance as does Freud's psychoanalytic method.

Based on the conception of mental processes already mentioned, its application involves several special features. The most prominent among these are free association, Jung's word-association method, and dream study or interpretation.

In order to obtain at least a general idea of the patient's nature, habits, interests, experiences, and mental processes, the physician—explaining the necessity of his being confided in unreservedly—has the patient relate all he can remember of his early and later life. This account is usually very imperfect. It is supplemented by invoking free association as follows. Passivity is sought by having the patient assume a recumbent or otherwise comfortable position in a quiet room. The physician, seated out of his sight, then engages him in general conversations, merely directing the trend of his thought and encouraging him to mention every association, however trivial, the line of thought suggests; if of some painful experience, for instance, what else occurs to him in connection with it. The personal resistance of the patient both to allowing unpleasant memories to come to the surface and to give voice to what they bring to mind, often results in many important omissions. However even this disinclination is revealing, as also slips of the tongue, displays of emotion, various unconscious acts, and similar unintentional indications and disclosures.

By the valuable assistance of Jung's word-association method many of these omissions are supplied. A hundred promising words are selected by the investigator. To each one as spoken the patient is required to respond with the first word that it suggests. The reaction time is taken in each instance with a stop watch. It has been established that, whenever a word recalls to the patient a painful incident or topic, the time of the response will be increased and increased proportionally.

Repeating the trial with the same list of words, will give additionally the associations most frequently evoked in connection with them. To this should be added the patient's subsequent explanation of these emphasized associations and increased time reactions.

The expert analysist is not infrequently able by the aid of this method and his previous knowledge of the case, to penetrate without further assistance to the true cause of the hysteric or psychasthenic symptoms exhibited by the patient.

Freud, however, considers the study of the sufferer's dreams a very important part of psychoanalysis, believing that dreams offer the most direct route to knowledge of the unconscious processes of the mind. He has shown, as one writer succinctly puts it, "that dreams represent an imaginary realization of various wishes that in daily life have undergone repression."

Dreams are among other things the tag ends of daytime thought structures, containing as their nucleus the essentials of wish formation. The energy which produces thought structures is frequently sufficient to prevent sleep by continued and prolonged activity. "Dream work" disposes of these tag ends or remnants, fulfills repressed desires, provides a partial outlet for that which is incompatible with the waking mind of consciousness. Dreams, therefore, are the guardians, not the foes, of sleep, save in *pavor nocturnus* or the "fear-dream" when, censorship being relaxed, and the latent thought in danger of reaching consciousness imperfectly disguised, fear prevents this outcome by awakening the sleeper. Analysis shows the fear-dream to be of sexual origin, the sexual effect modified and manifested in the form of anxiety.

While it seems not unreasonable to believe that wishes of diverse origin may furnish material for dream work, Freud maintains that all are of sexual origin and that most if not all may be referred to initial experience in early childhood, buried yet dynamic, resulting in psychic conflict between natural biologic trends and the artificial strictures imposed by the social order. The examination of this contention is beyond the scope of the present paper, but eminent psychoanalysists have demonstrated that

there is so much of truth in his theory that it merits careful and unprejudiced investigation.

No paper on psychoanalysis can be complete without brief reference, at least, to the mechanism of dreams. Many dreams are extremely complex, also the latent content—or underlying psychic force and meaning—may show in its manifest content; that is, what the dreamer recalls, on awakening, a remarkable and puzzling metamorphosis due to several factors: *condensation,* one element in the manifold content being made to do duty for several elements of the latent content; *displacement,* ideas important in the latent content, being made unimportant in the manifest, or something unimportant in the latent, made conspicuous in the manifest content; *dramatization,* or the expression of the latent dream content by means of successive pictures, pantomime, etc.; *secondary elaboration,* meaning additions, modifications, and omissions produced in the subsequent waking state.

These four processes aid the psychic censor in disguising the true latent content of the dream. The fourth factor may be to an extent eliminated by requiring the patient to write down the dream as soon as he awakes.

It will readily be appreciated that the very subtlety and scope of psychoanalysis precludes rapidity in its application. This method of diagnosis and treatment frequently requires several months for the complete exhibition of its serviceableness, nor is this unreasonable. Disturbances of the psyche which collectively are the product of years, are not to be removed or nullified by the "presto, change!" of a conjurer. Early in the treatment, however, many symptoms are often alleviated, while permanent cure as the ultimate outcome can be more confidently and logically expected than when, with but imperfect knowledge of basic psychic causes of the psychic symptoms of a given case, we endeavor somewhat blindly to restore health to mind and body.

Psychoanalysis is peculiarly applicable to functional hysteria, to psychasthenia, phrenasthenia and the anxiety neuroses. The discovery of the causative excluded psychic content permits, by katharsis or discharge of pent-up emotivity, the deferred reaction. Re-educative efforts on the part of the patient can then be intelligently made under equally illuminated guidance.

The last word on psychoanalysis has not yet been written. No one method of diagnosis and treatment is of universal applicability to the psychoneuroses, but this, at least, is one worthy of the most unprejudiced investigation by appropriate tests, if for no other reason than because it is the attempt of a recognized master to treat abnormal psychology by distinctively psychological measures.

DIET AND FEEDING IN PEPTIC ULCER. A Review.*

By Frederick B. Percy, M.D., Brookline, Mass.

Whatever opinion may be entertained as to surgical or medical treatment of this condition, one cannot deny that the subject of food is paramount.

One may not go so far as a recent author who insists that the after treatment following surgical procedure is in a large measure responsible for the permanent results; and yet, as a prophylactic measure, as a remedial measure, diet is all important. One may admit that Celsus, Grasius, Baillie and Abercrombie made wonderful advances in the treatment of gastric conditions, yet to Cruveilhier we owe our present knowledge of peptic ulcer. Ever since his clear enunciation of what it was and his belief in its dietetic treatment with milk, the medical profession for a century departed little from his teaching.

Countless experiments have been made to determine the possible cause of peptic ulcer, and thus far no absolute answer has been given.

Bolton, from a very interesting series of experiments draws these conclusions:—

1. "That acute ulcer fails to appear if the gastric juice be put out of action, although the animal may die from the effects of the poison.

2. That the ulceration produced in the presence of hyperacid gastric juice is much more extensive than that in a stomach secreting juice of the normal acidity.

3. That the gastric juice is able to attack the gastric cells and produce an ulcer although the cells are not actually killed by the poison.

4. That hydrochloric acid of the various strengths found in the condition of hyperacidity in the human subject is able to act as a poison for the gastric cells.

5. That acute gastric ulcer heals equally well whether the gastric juice be increased or diminished in acidity to the extent usually found in men provided that the stomach empties itself in the *normal time.*

6. That acute ulcer is more easily produced in the digesting than in the resting stomach, and that in the former case it is much more extensive in character.

7. That undue retention of food in the stomach delays the healing of gastric ulcer for at least twice the normal time, because the prolonged action of the gastric juice irritates the base of the ulcer and may cause necrosis of the granular tissue in its early stages and

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* Read before the Massachusetts Homœopathic Medical Society, October 9, 1912.

excessive formation of fibrous tissues in its later stages. The growth of the new mucous membrane over the base of the ulcer is thus delayed, and there is produced more inflammatory thickening than usually occurs in the condition of normal healing."

He also says in conclusion: "In the treatment of a case of ulcer of the stomach the following principles should be observed:—

a. During the early stages of the healing of acute ulcer the patient should be given a food which does not stay long in the stomach and which does not incite a copious flow of gastric juice.

b. The period of treatment in bed should be *at least* three weeks.

c. The starvation diet of the older physicians is not necessary, because the general nutrition suffers too much and because ulcers heal with some diet such as the above.

d. In the case of acute ulcers which are extending or chronic, ulcer healing cannot be expected to occur in three weeks because the ulcer must first be got into a suitable condition for healing, and that owing to its size and thickness the healing must take some weeks longer, so that the treatment in bed is to be conducted like that of simple acute ulcer but extended over a period twice as long (six weeks).

e. The high degree of acidity in the ulcer should be controlled by the administration of alkali."

It can be said without any fear of contradiction that the usual regime adopted by the general practitioner is to starve the patient for two or three days, allowing a little ice, soups, ice with milk or water, then small quantities of milk at short intervals, increasing the amount until three pints are taken daily. After a certain time soft custards, egg, bread and milk, and other soft articles of diet are added; at the expiration of some weeks a gradual return to a normal diet. It may be possible that under this regime gastric ulcer disappears, it may be that to some the results are entirely satisfactory; but it has seemed to me that a careful consideration of three distinct methods of feeding will prove of interest and profit. I say three advisedly for, while many contend that the Leube-Ziemssen and the Lenhartz are the two methods of the day, I must add the mode of procedure advocated by Hawkins. In the latter the period of temporary starvation, with or without nutrient enema, followed by a gradual milk diet is founded upon the principle that if no food is taken by the mouth absolute rest will be afforded to the stomach, "rest being as conducive to ulcer of the stomach as to the pain of a leg." If the principle is carried out logically no fluid, no water or ice should be given by the mouth for, as Rolleston points out, "water is passed on from the stomach to the intestine, involving the peristaltic movement of the stomach wall."

Authorities vary as to the length of time that patients should be prevented from taking food by the mouth. Grasius advises "from ten to fourteen days if water injections alone are being given. Well nourished patients, as many of the subjects of gastric ulcer are, will bear deprivation of this food for this period or even longer, but it should not be advised for a thin person."

Boyd and Robertson, as a result of their observations and those of others, recommend an enema of yolk of one egg and peptonized milk up to 10 ounces. Exclusive rectal feeding should not be continued beyond ten or perhaps fourteen days. The first food to be given by the mouth is milk, in quantities of two ounces every two hours, for nine doses in the twenty-four hours. It may be diluted with barley water or lime water in the proportion of two of milk to one of diluent. In the absence of pain the milk is gradually increased until four to six ounces are taken at a time, and three to four pints in a day. It should not, at all events on physical grounds, be peptonized, for there is no difficulty in the digestion of casein in the adult intestine, nor is it known to irritate the stomach. Hawkins recommends "that some casein preparation should be first given with the milk and that about a fortnight after that such food as arrowroot, bread and milk, rusks and milk, corn flour, Benger's Food, or thin bread and butter, two pints of milk being taken in the twenty-four hours. At the end of four weeks, if there is no discomfort, two or three eggs are allowed with bread, rusks, sago, tapioca, potato pureé, clear soup, mutton broth and beef tea. This diet of milk, eggs, carbohydrates and fat is maintained further for fourteen days. Hawkins believes that extra days spent upon it means the increased chance of a sound and permanent healing. Fish and chicken are not taken until at least six weeks of mouth feeding, the patient being now allowed up during part of the day. If no discomfort follows, the diet is then varied, any article of food which causes pain or discomfort being at once withdrawn. An ordinary diet containing meat and vegetables is postponed until the patient has shown that she is capable of digesting other foods perfectly while carrying out her usual duties.

For however long or short a time rectal alimentation should be continued the rules laid down by Hemmetter must be observed, and they will bear repeating.

1. Every injection preceded by cleaning injection one hour previously.

2. Amount must not exceed eight ounces.

3. After injection patient must remain in recumbent position one hour, and a hot towel should be held firmly against anus for fifteen or twenty minutes.

4. Patient should lie on left side with hips raised upon a pillow, and injection should be given very gradually.

5. If rectum is very irritable ten drops of opium to each injection.
6. Use funnel or irrigation bottle and Langdon tube.
7. The tube should in adults be passed high up into the colon fourteen to eighteen inches.
8. Temperature of injection should be 98.6.

Ewald recommends for rectal injection instead of the one first given:

Milk 9 oz.
Tropon a drachm and a half.
Knife-point of salt and sugar each.
Two drops of opium tincture.
I have for years used the following with entire satisfaction:—
One egg.
Salt spoonful of salt.
Milk, 8 oz.

My experience with rectal feeding has probably been that of most of you; an intolerant rectum in some patients, after two or three days, which nothing will control, and again, as in a recent case under my observation, rectal feeding was continued for two weeks with only benefit to the patient.

The so-called Leube treatment is essentially as follows: (1.) Absolute confinement in bed for two or three weeks; (2) hot flax-seed poultices in the day time and a Priessnitz pack over the epigastrium at night; (3) bismuth medication; (4) diet, which consists for the first week or ten days of milk, usually boiled, or milk diluted with barley water, oatmeal water, or rice water; Leube's meat solution, tea and a little bouillon, and towards the end of this period softened, unsweetened zwieback. If hemorrhage has occurred recently, he gives no food by mouth, but depends on rectal feeding for several days, then starting in as above. Feeding is frequent and in small quantities, gradually increasing. For the next ten days he allows, in addition, boiled calves' brains, boiled thymus, well-cooked sago and rice in milk, gruels and mushes, raw and soft-boiled eggs. Later scraped beef is added, and in another week scraped raw ham and mashed potatoes; then gradually boiled chicken, venison, roast beef, pike, and the pureés. After the fifth week he gives careful ordinary eating, avoiding for some time coarse foods, skin, tendon, fruits, acids, alcohol, and spices. Leube has reduced his mortality from 13 per cent in his first cases to 0.5 per cent in his last series. He has reported up to the present time 627 cases. In 547 cases without bleeding he had 90 per cent of cures and no deaths, the average duration of treatment being four or five weeks. Of the 80 cases with hemorrhage, 90 per cent also were cured and the

mortality was 2.5 per cent. In his entire series of 627 cases he claims 90 per cent as cured, 8.5 per cent improved, 1 per cent failed to improve, and 0.5 per cent died. If the "abstinence cure" is attempted, for the first few days dependence is placed on rectal feeding. It is claimed that thereby the stomach is given complete rest and that a fair state of nutrition can be kept up for some days by rectal alimentation."

As to the Lenhartz treatment:—His treatment is founded on the propositions that the presence of semi-solid food in the stomach is not so harmful to an ulcer as that of gastric juice without food; that gastric juice is not entirely absent in the fasting stomach, and in addition to irritation, an ulcer may cause recurrence of hemorrhage by dissolving a clot: that the subnutrition accompanying rectal feeding and a milk diet is prejudicial to the healing of an ulcer. The experimental observations of Matthes, Quincke, Umber, and others referred to above, are quoted in support of these propositions. An essential point of the method is that the food introduced into the stomach shall be of such a nature as to excite but little flow of juice, and to neutralize the hydrochloric acid of any that is secreted; also there must always be some food in the stomach in the waking hours, but never enough to distend it. For this purpose teaspoonful doses of beaten-up egg and milk are prescribed. Egg albumin rapidly combines with hydrochloric acid. Milk calls forth less secretory activity in the stomach than any other food. The fat of the yolk of the egg and of the milk is known to inhibit the secretion of juice. Nothing else but milk, egg, and a little sugar is allowed for five days. As the food is given in such small quantities the movements of the stomach are reduced to a minimum. Experiment shows, as we have seen, that distension of the stomach, by keeping the mucous membrane from closing over an ulcer, is likely to be far more harmful than contraction. The feeding is begun within a few hours of hemorrhage.

The general routine of the treatment advised by Lenhartz is as follows:—"The patient is kept absolutely in bed for four weeks, for the first two of which she is not allowed to move from the supine position for any reason whatever. All mental excitement must be avoided. An ice-bag is kept upon the stomach almost continually for the first two weeks. The dietary consists of eggs beaten up with sugar, or in some cases with wine and ice, and of milk. These two foods are taken in small quantities, at frequent intervals, from a teaspoon, the quantity prescribed being spread over the day, and not given at definite meal-times. The first day seven to ten ounces of milk are given and one egg. The quantity is increased daily by three and one-half ounces of milk and one egg until one and three-fourths' pints of milk and six eggs, or in some cases eight eggs are

reached. If there is any pain or distension the quantity of milk is reduced. From about the third to the eighth day raw, or almost raw, mince is added, starting with an ounce in divided doses, either beaten up with egg or alone; the next day, if the mince is well borne, two ounces are given. From the seventh to the eighth day boiled rice is added, followed by softened bread and later by a small quantity of bread and butter. One or more eggs may now be lightly boiled. The diet is then gradually increased by the addition of meat or pounded fish, with a corresponding reduction of eggs, until by the end of the fourth week the patient is on an ordinary mixed diet containing the common foodstuffs with the exception of indigestible solids such as peas and other seeds. The patient is instructed to masticate very slowly. On the twenty-eighth day the patient is allowed to get up, and discharged from the sixth to the tenth week."

Joslyn, Gilbride, Lambert and many others in this country have tested the merits of Lenhartz's diet and reported favorable results.

Hewes, whose opinion every man in New England values, has formulated his views on this subject as follows:—"If gastric ulcer is acute, associated with hemorrhage at the time of operation, keep absolutely quiet. Feed every half hour with two ounces of milk, one large soda cracker powdered mixed with it.

If pain, Bismuth,— Milk of Bismuth, tablespoonful every three hours. After three or four days increase feedings to four ounces with two or three crackers given every hour, always powdered, with one or two drams of sugar. Then get to two-hour intervals with eight ounces and four to six crackers at each feeding, mixing the cracker thoroughly with the sugar. After two weeks keep up two-hour feeding but replace milk and cracker at times by Indian meal; flour gruel, made thin with milk and sugar; mashed potato; custard. Later, rice; Wheat Germs cereal; soft boiled eggs—very soft; soft toast; with all the butter desired.

In some cases it seems useful to give olive oil two or three times a day, in one ounce doses. Sodium bicarb., 1 drachm, any time for relief of distress.

Keep on last diet four months, food every two to two and a half hours. Bowels regulated by Carlsbad at first, later by Agar Agar.

This is the treatment for gastric or duodenal ulcer. Equally good is the milk and white of an egg diet, but less palatable.

If ulcer fails to yield or is adherent, or at pylorus so that it causes stasis, in all old ulcer cases at pylorus or in duodenum with stasis demonstrated by use of tube in fasting stomach, operation is the only treatment.

Here I advise resection if possible surgically,—removing or infolding the ulcer. This obviates the possibility of later cancer for-

mation. If resection or extirpation of the ulcer is not feasible posterior gastro-enterostomy with *closure of pylorus* is to be done."

One hesitates to draw from private and hospital experience (and so relatively few cases have been seen) any conclusion as to the merits of these various methods; and yet, there are certain additions to the diet, or rather modifications it may not be amiss to mention. As a modifier of milk I have found one part Vichy, white of an egg, and two parts milk not only palatable but acceptable.

Ice cream. in one instance used as the sole article of diet, stood me in good stead; and in place of the ordinary broth one made with one part chicken, mutton or veal stock, one part barley water, using Robinson's barley, and one part milk has seemed to me to fulfil all the indications for a single article of diet.

In one of the most serious cases of hemorrhage following gastric ulcer, when on the third day an operation had been refused by the surgeon, the Lenhartz diet was instituted and with apparent success. A recurrence of the ulcer in a year demanded its repetition, and two years afterward a posterior gastro-enterostomy was made with apparent recovery.

To recapitulate, or rather to summarize my views, let me offer the following suggestions:—

1. Make a positive diagnosis, begin the treatment early and carry it out with painstaking care.

2. Absolute rest in bed for four weeks, and periods of rest during the following six months. Attempt to secure a calm mind and quiet nervous system; and an improvement of general health.

3. Do not forget the benefit of external applications,—ice-bag in case of hemorrhage; poultices in day time with cold compress at night, or Leube's treatment. Individualize each case and whatever diet and regime you may decide upon attend to every detail in its application, and remember vigilance is imperative if a positive cure is to be made.

THE CHILDREN'S ERA

Against the prediction, based on "race suicide" statistics, that 150 years hence babies will entirely go out of fashion can be opposed the statement made at the doctors' meeting in Washington, that about 55,000,000 births are registered every year throughout the world and that the death rate is slowly but surely going down. Nearly a quarter of these 55,000,000 infants die in their first year, but experiment, especially with diet, has proved that fully half of these deaths are preventable. To make this prevention a reality is one of the growing purposes of all the civilized nations. Prophylaxis now attends the child at its birth and follows it up to the time it leaves school; in some cases it continues with it into the workshop. But the main thing is the increasing attention which science is giving the young. It knocks high as a kite the prediction of a future sadly lacking in children. In fact, it presages that this and the next century or two is to be pre-eminently the children's era.—*Boston Journal.*

CONSIDERATION OF PAINS IN DISEASES OF STOMACH, BILIARY TRACT AND APPENDIX.*

By Charles T. Howard, M.D.,
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Pain is the one symptom which the physician and surgeon are called upon to relieve more frequently than all others combined. Nearly all of the patients applying to us for relief have come because they are having pain, more or less intense, more or less acute, in some portion or other of their bodies. In order to understand and properly interpret these pains, we must study them carefully as regards their character, location, persistence and associated symptoms, and we must consider them in relation to anatomy and nerve supply.

Your Chairman has asked me to consider the pains of the biliary tract, stomach and appendix on the basis outlined above.

First, the biliary tract comprising the liver, gall bladder and ducts.

The gall bladder is a reservoir for the bile, located in a fissure on the under surface of the right lobe of the liver, receiving the bile from the liver between the periods of digestion through the hepatic and cystic ducts, discharging it during the periods of digestion through the cystic and common ducts into the duodenum.

It is composed, as are the bile ducts, of three layers, a mucous layer innermost, then a muscular coat, and a peritoneal coat. The blood supply is from the cystic branch of the hepatic artery and runs upward in close conjunction with the cystic duct. The nerve supply is from the hepatic plexus of the sympathetic system, from the pneumogastric nerves, particularly the left, and from the right phrenic.

Now the pains in diseases of the gall bladder or ducts are due almost exclusively to three causes, over-distension, inflammation, and violent contraction of the muscular coat.

Whenever the ducts are occluded so as to interfere with the outward flow of bile, the gall bladder becomes distended and there is felt a heavy, dull, constant ache in the region of the gall bladder itself which is only relieved when the obstruction is removed and bile is again flowing through the ducts.

This obstruction is more frequent from gallstones, and where the stones are too large to enter the cystic duct, it persists until the tension becomes great enough or some change in position causes the stone like a ball valve to be pushed aside from the

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opening of the duct and bile again to flow. When the stones are small enough to enter the duct, the irritation excites violent contractions of the muscular coat, in nature's effort to be rid of the exciting cause, and the familiar gallstone colic is experienced; an intense intermittent pain, varying in severity with the size of the stone, coming on suddenly, persisting for several hours or days, and letting go suddenly when the stone is finally pushed into the duodenum. Such attacks recur at more or less frequent intervals and are associated with gastric disturbances in the interval, and while usually due to gallstones, may be sometimes attributed to the presence of inspissated bile in the gall bladder, so thick that strong contractions of the muscular coat are necessary to force it through the ducts, a condition usually found in patients who are in the habit of drinking but little water.

Now just a word as to jaundice. It is more or less a common fallacy that jaundice is one of the constant symptoms of gallstones. Such is not the case. With the great majority of gallstone cases, jaundice is not present and has been present with none of the previous attacks. The only cases where jaundice occurs is when the stone in its passage becomes lodged in the common duct and remains lodged there for several days. Then and only then does jaundice appear.

A small stone passing through the duct in a few hours will never cause jaundice. So that, in making our diagnosis of gallstones, we should not consider the absence of jaundice as contradictory evidence and should look upon its presence or history of it having been present, merely as confirmatory.

Associated with the symptoms as outlined, there are two points of pain which are most constant and which the writer in his experience has learned to consider almost pathognomonic of liver or gall bladder disease. The first is felt in the tip of the right shoulder, the other in the back just below the lower angle of the scapula. In my experience, the pain in the tip of the right shoulder is so constant that with it present, I am confident that trouble exists either in the liver or gall bladder, and when it is absent I scrutinize the rest of the history with a doubting mind.

Above, I have said that the nerve supply of the liver and gall bladder is from the hepatic plexus of the sympathetic, the pneumogastrics, particularly the left, and from the right phrenic. Now, the phrenic nerve takes its origin in the fourth, fifth and sixth cervical nerves, receiving most of its filaments from the fifth.

The fifth cervical nerve supplies the muscles and skin on the tip of the shoulder. Consequently, irritation of the terminal filaments of the phrenic nerve are conducted upwards and are reflected sympathetically along the fifth cervical to the shoulder, a most

direct route and consequently one that is most frequently felt whenever the terminal filaments in the liver and gall bladder are irritated.

Occasionally, the irritation extending up the phrenic, will be transmitted directly across the cord and be felt in the left shoulder, resembling very closely in such cases the pain which is felt in angina pectoris. When this does occur, however, it usually shifts to the right shoulder before many hours have elapsed, or, at least, before many attacks have taken place.

The other pain referred to, that is, the one at the lower angle of the scapula, is due to the irritation of the sympathetic nerves, being transmitted to the hepatic and solar plexuses and through the connection of the solar plexus with the somatic nerves, is transmitted through the eighth dorsal nerve to the back and around in front to the epigastrium.

It might be well here to say a word of explanation as to the constancy of vomiting or at least of stomach disturbance in nearly all abdominal diseases. Whether the patient is suffering from gall-stones, appendicitis, floating kidney, peritonitis or what-not, gastric disturbances are almost sure to be present, and it is only by a careful survey of the exact type of stomach disturbance present in a particular case that any conclusion can be reached.

If we consider for a moment the nerve supply of the abdominal viscera, the explanation is clear. All of the abdominal contents are supplied from the sympathetic nervous system, consisting of a series of ganglia connected together by intervening cords extending from the base of the skull to the coccyx, one on each side of the vertebral column.

Three great gangliated plexuses or aggregations of nerves and ganglion are situated in front of the spine in the thoracic, abdominal and pelvic cavities. That in the abdominal cavity, the solar plexus, is the largest of the three and is situated over the great vessels just below the diaphragm. From it all the viscera in the abdominal cavity are supplied, the stomach receiving a large number of filaments.

Hence, it is easy to see why, when there is irritation in the gall bladder, the hepatic plexus of nerves is excited, the pain is transmitted to the solar plexus and referred through it to the stomach. The same is true with appendicitis, or, in fact, almost any of the abdominal conditions, and explains the presence of vomiting as a symptom in all except those due to mechanical causes.

With stricture of the pylorus, or obstruction of the bowel, of course the cause is mechanical and not due to referred nerve impulses.

Now, as to the causes of pain in acute appendicitis. Here, again, the pains are due to over-distension, appendiceal colic, inflammation extending to the peritoneal covering, and to the peritoneum lying adjacent.

Appendiceal Colic. We are all familiar with that class of cases which give a history of pain coming on rather suddenly, being intense for an hour or two and passing away again, leaving only a slight soreness over the appendix.

Such cases are due to an obstruction of the lumen of the appendix which is overcome. The causes of the obstruction are two, either a hard calculus or a stricture of the mucous membrane. Where the attacks are infrequent, it is probably a calculus; where frequent, probably an organic stricture. The appendix is lined with mucous membrane, as is the intestine, and is constantly secreting a mucous substance. Under any conditions where the opening into the bowel is obstructed, the secretion is dammed up and the organ becomes over-distended, peristalsis is excited and if the obstruction is not too firm, the resistance is overcome and drainage again established. I have said that this is usually occasioned by organic stricture.

The appendix is a useless rudimentary organ undergoing retrograde changes. The involution proceeds rapidly from adolescence to middle age. If in the course of these retrograde changes, the lumen is early constricted near the caecal end, appendiceal colic is the result.

The internal secretion accumulates, distends the still patulous portion of the appendix, and finally when the distension and pressure has become sufficiently high forces open the stricture and allows the secretion to escape. Consequently, we have the frequently recurring attacks of appendiceal colic.

When the stricture becomes too firm to be forced by such means, the contents of the appendix rapidly become purulent, because colon bacilli are always present within its lumen, the walls of the appendix become inflamed and thickened, and if drainage still fails, necrose and rupture with ensuing peritonitis.

Now, the pains of appendiceal colic and acute inflammation of the appendix are felt first usually in the epigastrium and after continuing for a few hours become located over the appendix. They are so referred because of the nerve supply of the sympathetic system, as I have outlined above, the first shock taking the nervous system by surprise as it were and being referred to the solar plexus.

It is for this same reason that the patient is apt to vomit once or twice soon after the onset; then to stop vomiting for a

number of hours, when if the attack is not relieved, will again start vomiting.

The shock of the initial pain is transmitted through the sympathetic nerve filaments of the appendix to the solar plexus and hence referred to the stomach, causing irritation of that organ, with nausea and vomiting. After the first shock is passed, the pain is referred to the appendix through the connection of the sympathetic system with the somatic nerves, and the irritation of the solar plexus is relieved.

When the attack continues, going on to the inflammatory stage and extending to the peritoneal layer of the appendix and to the adjacent peritoneum, we usually have vomiting beginning again. Here again, the sympathetic nervous system is violently irritated, so violently that the impulses are transmitted through the solar plexus to the stomach.

With chronic appendicitis, the picture is usually not so clear, and so diverse are its manifestations that it may well simulate almost any other disease. Pain is not often severe and is apt to be felt more as an epigastric distress coming on fairly soon after the ingestion of food. The pain is usually irregular in its appearance as regards the taking of food.

Gas is present in the intestines in large amounts and usually is responsible for as much of the discomfort as is pain from the appendix itself. The associated stomach disturbances are more apt to be nausea than vomiting.

The explanation of the symptoms is the same as for an acute appendix, namely, irritation of the sympathetic nervous system, referred to that abdominal brain, the solar plexus.

It may not be improper to speak at this time of the so-called Lane's kink, inasmuch as the symptoms are closely similar to those of chronic appendicitis, and it is a condition with which, according to Lane and the Mayo brothers, we have not sufficiently familiarized ourselves.

It consists of a firm adhesive band running from the ileum about four inches from the ileo-caecal valve to the posterior abdominal wall. The result is that the ileum is rotated upon itself and firmly held in this position, while the caecum with its load of faecal matter is carried downward, creating a kink in the ileum with consequent partial obstruction.

The pathology of this condition is perhaps not clearly understood, but inasmuch as it is usually associated with cases which show a thin veil of peritoneum over the caecum, it may be due to a defective embryological development,—that is, a late rotation of the bowel and descent of the colon from its hepatic position, the bowel thus being forced to burrow its way through the peri-

toneum. When found, relief is brought about by simply dividing the adhesive band and suturing the peritoneum over the raw area.

In diagnosing acute appendicitis, the possibility of the symptoms arising from a pneumonia must be borne in mind. A right-sided basal pleuro-pneumonia often will closely simulate an acute appendicitis. The pain will be referred to the region of the appendix, tenderness will be present and, with the rise in temperature and pulse, the mistake is easily made.

If on the other hand, the possibility of this similarity is kept in mind, and the lungs carefully examined, the diagnosis is clear. The mistake in diagnosis occurs most frequently in children.

The explanation of this is comparatively clear. The abdominal muscles are supplied by the lower six thoracic nerves and the first lumbar. The sixth and seventh supply the skin over the pit of the stomach, the tenth to the level of the umbilicus, the twelfth to within five cm. of the symphysis. Remembering now that the diaphragm posteriorly is attached to the eleventh and twelfth ribs, it is clear that pleurisy of the diaphragm will irritate these lower thoracic nerves and be referred to their terminal filaments in the anterior abdominal wall, well below the level of the umbilicus, with consequent pain simulating appendicitis.

In considering diseases of the stomach, both functional and organic, we cannot fail to recognize the fact that pain as a distinguishing feature is not marked, that it may be present in marked degree in slight affections and may be absent in such serious lesions as a large ulceration, either malignant or benign, until the disease has progressed to a very advanced stage, even to the point of perforation.

The most frequent location of gastric pain is in the epigastrium just below the xiphoid cartilage. Next in frequency is the pain in the back between the scapulae and about on a level with their lower angles, bringing it on a level with the spinous process of the seventh dorsal vertebra. Pain is elicited also by pressure upon the points of exit of the eighth dorsal nerve. The explanation of these two points of pain and tenderness, namely, the epigastrium and the exit of the eighth dorsal nerve from the spinal canal, lies in the fact that the solar plexus sends filaments to the roots of the seventh, eighth and ninth dorsal nerves. Consequently, irritations of the gastric filaments of the solar plexus are transmitted through these connecting filaments to the dorsal nerves.

As I have suggested above, there is almost no abdominal condition which does not have associated with it gastric disturbances in more or less a pronounced degree, and to my mind there is no class of cases so difficult of diagnosis as the stomach lesions.

In order to reach conclusions, it is necessary to eliminate disease of the appendix, gall bladder, etc., before locating the lesion in the stomach itself.

The following differential table may be of value in reaching conclusions:

PAIN

(*Gallstones*). Attacks come on suddenly, most frequently at night or when lying down, are intermittent in character, intense in their severity, lasting for a few hours, when they pass away as suddenly as they came. The pain is felt in the righthand area of the costal arch and shoots around to the back under the angle of the right scapula, and is also referred to the tip of the right shoulder.

With stones which do not enter the duct, pain is felt in the same areas with less severity, (more chronic in type). Vomiting is present with the attacks and usually symptoms of indigestion between.

With gastric ulcer, pain is usually felt between meals. Relief comes with eating and lasts from one to five hours; then nausea, vomiting and recurrence of the pain, and the process is repeated after each meal with more or less regularity.

Now, cancer of the stomach usually is grafted upon an old ulcer of the stomach, so that the previous history of the gastric cancer is the history of gastric ulcer. When cancer is present, the pain is usually less acute but more prolonged; that is, food does not give the same relief. Vomiting on the other hand gives greater relief.

With gastric ulcer, there may be several months or years with entire relief of symptoms, when the patient is in perfect health. Then comes an attack with pain after meals, etc., which lasts for weeks or months; then another period of relief. With gallstone colic, the attacks come frequently, are of a few hours duration, with comparative health between.

With appendiceal colic, the attacks recur irregularly, are of short duration, with entire relief between. With appendicitis, acute, the attacks come more or less regularly every few weeks or months, and if recovery takes place without surgical interference, last several days, with soreness following.

VOMITING

With gastric ulcer.—Nausea and vomiting of a large amount of hyperacid material with or without considerable bright blood, and some relief from the vomiting.

With gastric carcinoma.—Irregular vomiting of undigested food taken into the stomach hours or days before, small amounts of dark, decomposed blood; marked relief from vomiting.

With appendicitis (*acute*).—Vomiting once or twice of the stomach contents soon after the onset of the pain; then usually cessation of the vomiting until the peritoneum becomes involved, when it begins again and occurs frequently.

In the course of this paper, I have endeavored to bring out the characteristic types of pain in the several lesions and briefly a few of the associated symptoms.

In spite of the most careful study of the minutest symptoms of these several diseases, we are not infrequently baffled in our efforts to make a positive diagnosis.

Bearing in mind the frequency with which gastric carcinoma is grafted upon gastric ulcer, the frequency of cancer of the liver or gall bladder following old gallstones, the argument is strong in doubtful cases for an exploratory laparotomy, and even when on opening the abdomen nothing surgical is found, the assurance that the beginnings of carcinoma are not present, is worth all the risk taken.

I trust from this you will not construe that I believe in the indiscriminate employment of the exploratory incision. Far from it. A large proportion of the cases can be diagnosed if sufficient time and care be employed, calling into service laboratory aid. But when all resources have failed to make a positive diagnosis, the exploratory laparotomy should be employed as the final scientific step in reaching conclusions.

HOW TO BECOME A NEURASTHENIC.

Eat no breakfast.

Indulge in but one meal daily; at any rate not more than two. Eat no meat. Eat freak cereals, vegetables, nuts and fruit.

Masticate every morsel two hundred and sixty-eight times—two hundred and sixty-seven times won't do.

Take a cold bath every morning.

Take a laxative every day whether you need it or not. Better still, a cathartic. Take enemas frequently.

Be massaged daily.

Read the health magazines daily.

Read all the books on how to gain self-control and on psychotherapy.

Concentrate the mind upon the digestion and upon all articles of diet.

Upon every possible occasion discuss your imaginary troubles with your friends and coerce your wife into catering to every dietetic whim that you can formulate.

Buy a lot of apparatus for indoor exercise and roll a cannon ball around the abdomen every day along the course of the colon.

Be treated by someone who uses only the static machine in his practice for all cases—one of those lads who can reduce an enlarged prostate with vacuum electrodes.

If all else fails, try Christian Science.—*Critic and Guide.*

NEGATIVE CONDITIONS OF THE ALIMENTARY TRACT.*

By Frank W. Patch, M.D., Framingham, Massachusetts.

When asked to contribute a paper to this symposium I was reminded of a recent conversation with a patient who informed me that I was the thirty-sixth physician who had been called into consultation. You will realize that no patient can pass through the exigencies of fifteen years of suffering and come in contact with the varying opinions of thirty-six physicians without absorbing more or less medical lore.

Among other interesting observations from this individual, here is one which may offer food for thought. She had long ago decided that she would not put herself in the hands of another so-called "specialist," for the simple reason that she had observed that every man practicing along one line was sure to judge her condition from a limited point of view. If a stomach man, he found the key to her troubles in the alimentary tract; if a neurologist, the nervous system was the chief seat of disease; if a surgeon, some obscure abdominal possibility was fairly sure to be considered primary. May we not find in the observations of this patient, who I assure you was a bona-fide individual, several thoughts worthy our careful consideration?

The first of these is the wisdom of an occasional reading of the "Organon" and the consequent heeding of Hahnemann's injunction to study the whole individual and not limit our vision to a single group of symptoms; again, the necessity for accurate and painstaking diagnosis, such a diagnosis as is seldom possible at a single interview, in a severe case of chronic disease; and, lastly, the fact that local conditions, especially throughout the alimentary tract, frequently are a reflection of more deep-seated general states. I hesitate in making this statement, as I am fully aware of possible misinterpretation. Organic lesions arising along the line of the alimentary tract demanding heroic treatment and showing brilliant results of indispensable surgical measures are of frequent occurrence, as we all know. My object here is simply an effort to make clear a class of cases arising as a result of fatigue, or business anxiety, or exhibited during the course of neuresthenia, where the symptoms so closely resemble those of other organic conditions that confusion often follows and treatment may be instituted that would far better be omitted. Patients themselves are prone to place the seat of disease wherever discomfort arises.

* Read before the Massachusetts Homœopathic Medical Society, October 9, 1912

Dr. John H. Musser of Philadelphia was once asked the following question:—"Out of all the patients who consult you for what they suppose to be stomach trouble how many turn out after careful study to have any definite local disease of the stomach?" His reply was, "Not over ten per cent," afterwards explaining that the other ninety per cent were found to be suffering from neuresthenia, over-work, gallstones, tuberculosis, arterio-sclerosis or some other general disease.

There are two prominent reasons for this fact as above stated. These are, first,—the frequent reflex nature of pain or other symptoms connected with the digestive organs, together with the sensitiveness of these organs and their functions to mental and emotional conditions.

The second is that symptoms in those who are handicapped by limited strength are sure to arise along the lines of least resistance. Consequently the real key to many of these complicated and obscure sicknesses is to be found in the family and personal history of the patient.

For instance, a woman came under observation at the age of thirty-five suffering from insomnia. Her physician in referring her expressed himself as having reached the limit of his ability in an effort to overcome the troublesome condition. This was the family history. The patient was the tenth child in a family of thirteen. Four sisters had died of tuberculosis inherited from the paternal line. One brother and one sister had died of pneumonia. The patient herself had evidently come into the world with a vital energy considerably below normal. She had undergone a period of overwork as an immediate cause of the present trouble. Her vitality was not equal to the strain, the nervous system, being the line of least resistance, suffered; hence the break. It is only remotely possible that this woman living within her limitations would have developed functional disease of the nervous system, but she had not the reserve strength to stand the strain of unusual conditions.

Again, a patient presents herself after several years of suffering, with this history. Father died at the age of sixty-four of premature old age. He had previously been a sufferer from eczema. Mother died under forty of apoplexy. Two sisters had died, one at eighteen of gastric ulcer, another of heart disease. The physical history of the family had been one of constant illness. The patient at forty-four had been a partial or complete invalid for more than ten years. A number of different diagnoses of her condition had been made and different forms of treatment had been undertaken, always with the same result. In her plan

of life she had neglected to take into account the fact that the vital energy of her family was depleted to such an extent that in order to maintain any degree of health she must necessarily live a very careful life. Instead of this she had gone into business young, worked far beyond her strength year in and year out as long as she could stand on her feet, then dropped in the harness, a wreck. Yet this woman had no organic lesion of importance.

It is in cases like these that we come in contact with the above mentioned negative conditions of the alimentary tract, and in such instances the only way to overcome the trouble is to recognize these facts of history and take such measures as may result in the restoration of the vital force in as great a degree as possible.

Such patients remind one of a run-out storage battery. The system refuses to respond to ordinary stimulus until by some means the needed underlying energy can be restored.

Here if patients have digestive organs which are at all sensitive we are sure to get a line of symptoms closely resembling real gastric disease, and it is in this class of cases especially that the greatest care is needed in considering the whole individual rather than any of his organs.

Some years ago Dr. Richard Cabot of Boston investigated the statistics of the Massachusetts General Hospital in regard to supposed cases of gastric disease, with the following result.

The number of cases diagnosed as dyspepsia diminished in two years from 485 to 140; gastroptosis, from 88 to 7; gastric dilation, from 41 to 8; gastric atony from 26 to 8; hyper-acidity from 81 to 5; gastric catarrh from 27 to 13. From this one or two things must be inferred, either that gastric diseases underwent a marvelous reduction in the two years or that the method of diagnosis improved to such an extent as to wholly change the aspect of the statistics.

During the same period the actual number of cases of ulcer and cancer remained practically unchanged. Consequently we must accept the probable explanation of an improvement in diagnostic methods.

From my own observation I should feel that a very small percentage indeed of the sum of seeming diseases of the alimentary tract have their origin in that sphere.

Treatment carried out solely with regard to local conditions in these cases is sure to result in failure and disappointment. No matter how carefully we may study our materia medica for the indicated remedy, no matter if we in desperation resort to questionable palliatives and narcotics, we shall fail unless we recognize

these facts and place our patient in a position to recover his lost balance if recovery is possible.

Then may we not lay down this axiom, that exhausted general states often produce painful local conditions closely simulating organic lesions?

This brings to mind another case illustrating the position taken. A man of sixty-six who claimed to have been seized some six months before consultation with a violent attack of "stomach trouble" with vertigo immediately after taking malted milk. This was followed by a series of similar attacks accompanied by great weakness and indigestion. The stomach had been washed out with some relief; examination of the stomach contents had been negative. He had lost twenty-five pounds of flesh. The diagnosis in this instance was arterio-sclerosis. The patient was general manager of a large gas company in New York. For several years the business had been growing rapidly; two years before he had undergone a severe mental strain while acting as expert witness in an important court case. Later he had begun to lose sleep, finally waking about two A.M. in a panic of fear over the attack of seeming indigestion, lying awake for two or three hours and getting up in the morning worn out. When first seen he was in such a state of nervous tension that he had been obliged to give up business temporarily. He feared to take anything but the simplest food on account of the epigastric pain. To make a long story short, after removal from the old environment and getting entirely away from business cares the attacks of gastralgia disappeared as if by magic. He soon found himself able to take a normal diet and to obtain sufficient sleep. Recovery was rapid and satisfactory as far as the immediate and distressing symptoms were concerned.

Exhausted states of the nervous system and tuberculosis or a tuberculous family history are two of the general conditions most likely to be accompanied by negative local manifestations in the alimentary tract, although several other diseases are often at fault as well.

One of the most violent cases of severe eructation ever seen was in a patient who presented a very serious tuberculous history, both parents and a brother having died of that disease. This patient had become seriously exhausted nervously through injudicious foreign travel. She became subject to the most violent attacks of distention and belching during which it was possible to hear the noisy eructations several hundred feet from the house. Nux vomica gave some relief, but no remedy that was selected gave entire relief and all food was most distressingly borne, yet the whole group of symptoms was finally over-

come through means of absolute rest in bed according to the Mitchell plan.

The elements that enter into the successful handling of these cases are *first,* accuracy of diagnosis; *second,* a broad grasp of all the elements entering into history and etiology in order that one may get a comprehensive view of all the facts and thus be enabled to plan with judgment whatever scheme may be demanded by the exigences of the case.

This is pretty sure to include a great deal beside the simple selection of a remedy, for while the materia medica is our greatest ally in a large proportion of cases, we must not expect it to accomplish the impossible.

No drug can overcome the constant insults to all normal standards of health that many people attempt to include among their daily habits.

MODIFIED COW'S MILK AS A SUBSTITUTE FOOD IN INFANT FEEDING.

First Lieut. W. E. Fitch of the Medical Reserve Corps, United States Army, has written a most practical paper upon the subject of "Modified Cow's Milk as a Substitute Food in Infant Feeding" published in Pediatrics (October, 1912). He studies the comparative chemical composition of healthy women's milk and cow's milk, the general availability between cow's as a substitute food, the physical and chemical differences between cow's milk and woman's milk, and the modification of cow's milk with cereal decoctions.

Theoretically, the child under six months, because of the deficiency of salivary and pancreatic secretions is said to be incapable of digesting starches. Practically this is not true. Nearly every fluid in the human economy has a diastatic ferment and as a matter of fact the very young infant does digest starch. We have seen too many babies successfully fed on arrowroot to deny this fact.

Dr. Fitch points out the fact that the modification of cow's milk with a cereal is a mechanical one due to the gelatinized starch, which changes the hard curdling cow's milk into a soft curdling milk like human milk.

This is the experience of the leading pediatrists of the world. Not every infant, by any means, can take cow's milk, or ass's milk or goat's milk; but starch foods may be added with benefit to cow's milk in the majority of cases, is established beyond all question, experimentally, chemically and clinically.

The article is an exceedingly clear and practical consideration of the much be-fuddled question of the modification of cow's milk for infant use; and best of all it contains usable information.

CLINICAL DEPARTMENT.

Conducted by A. H. Ring, M. D.

Diagnosis: Adhesions about Pylorus with movable Duodenum.

Dr. Harry Lee who operated upon this patient has kindly written the following discussion: Epigastric distress without prominent nausea or vomiting, in a delicate boy nineteen, where habits of eating were too rapid, food of an improper sort and at irregular intervals, is not significant.

Continuance of such distress, at times amounting to pain, over a period of eleven months, with the pain distinctly localized in the "pit of the stomach" and left hypochondrium indicates a probable inflammatory process about the stomach, duodenum, appendix or gall bladder.

To establish which of these four organs was affected, the symptoms were considered, and by exclusion, brought down to a single organ. The degree of involvement,—if of tubercular origin, or a reparative process with adhesions to other viscera, —together with positive knowledge of the organ involved, could only be made by exploratory incision and ocular demonstration.

Gall bladder, or duct disease, might be expected to appear in a patient of another age, of more adipose type, to leave tenderness in the region of the tip of the right rib, with frequent referred pain to the tip of the scapula; a history of painful attacks attended by sudden relief on evacuation of bile or calculi into the intestine, and jaundice if involvement below the cystic duct. All these symptoms were absent.

Chronic appendicitis would be characterized by attacks of pain in the right iliac region, and tenderness or rigidity of muscles at McBurney's point, none of which were present.

That the symptom-producing focus was in the stomach and duodenum was quite apparent from the location of the pain and tenderness, increased pain soon after eating, sensation of abnormal action of stomach musculature, and the remission of symptoms for a brief period following a limited diet and medication.

A tubercular peritonitis involving the upper abdomen could not be excluded, the type of patient, night sweats, commencing emaciation and extension over months, leading toward this belief.

An exploratory incision was made from the ensiform cartilage to the umbilicus without disturbing the position of the viscera, and a digital examination was made of the gall bladder and ducts, under surface of liver, spleen and the lesser and greater curvatures of the stomach. At the pylorus, sufficient potency existed to allow the index finger to invaginate the stomach wall and pass through the pylorus. A thin, filmy adhesion, one and

one-half inches long and one half inch wide, was found bridging across the anterior surface of the gastro-duodenal point of junction. This band of adhesion was removed. An opening was made through the gastro-colic omentum and thorough exploration of the posterior wall of the stomach was made: no scar, palpable thickening, or sign of other inflammatory process about the upper abdomen was discovered.

The duodenum, extending for a distance of two inches from the pylorus, was freely movable, leaving such a reflection of the peritoneum from the posterior abdominal wall as to form a distinct duodenal mesentery.

Aside from the adhesion described and the abnormal mobility of the first portion of the duodenum, the upper abdomen was not notable.

The patient's subsequent freedom from pain and relief of hunger without distress after eating, allow the belief that impeded exit of stomach contents by the movable duodenum and tension upon a sensitive peritoneal area with adhesions, required surgical interference with what was a largely mechanical problem.

Case XI for Diagnosis.

The patient is a well nourished, attractive widow, aged 34 years, born in Canada, of English parents. Her grandparents all lived to old age. The father and mother are living. The former is of very nervous temperament and has always fainted easily from slight emotional shocks. This is also a habit of two of the children, of whom there were originally eight, but only four are living. A maternal aunt and two cousins suffered similarly to our patient.

The patient was a sickly, nervous child and had all of the childrens' diseases. Left school at sixteen for attacks which were diagnosed as appendicitis, and which she had off and on for eight years. Was married at twenty-three, and husband died four years later of typhoid fever. She has always had headaches, which sometimes became of a megraine character, with vomiting. Digestion has always been weak and capricious and she has been indulged and a little spoiled in this respect. Uses coffee to excess. Has always been constipated.

Mentally, she is bright and vivacious, has good insight and a fair sense of values. Perhaps almost hysterically anxious to be sincere and to tell all of her story. Has times when she cries at nothing; also has many fleeting phobias.

The main features of the case now are, apart from the neurotic temperament, a most irritable stomach and peculiar swellings. The former becomes painful and crampy from the taking of any

food, and frequently ejects it, so that she has lived mostly on liquids for three years. In spite of this fact, she has an excellent appetite and is harassed by the smell or thought of good things to eat. The other main characteristic, sudden swellings, appear on any part of the extremities. They are usually painless and resemble large blotches of urticaria, pale, sharply raised areas. These swellings come most frequently in the early morning and may be entirely gone by noon. The hands, feet and eyes are most commonly affected. She also has much short breath and occasional sense of smothering. Physical examination reveals a regular heart in which all the valves close with a loud snap. Pulse 70. Blood pressure, diastolic 120; systolic 80. Pulse pressure, 40. Lungs and abdomen negative. Neurological examination negative except for fine tremor of closed lids. Urination is at times excessive, with clear watery urine, at others scant and high colored.

From what is the patient suffering?

NO MARRIAGE LICENSE WITHOUT A PHYSICIAN'S CERTIFICATE OF FREEDOM FROM VENEREAL AND MENTAL DISEASE.[1]

W. J. Robinson thinks that woman is now awake to the fact of her independence and that she demands the right to dispose of her body as her own, and not her husband's property.

She desires to know what is to become of her body when she becomes married.

She is becoming foolish enough to refuse to be a victim to man's ignorance and brutality, and to ask for a guarantee that the marriage bed will not soon be converted into an invalid's bed, and that the wedding march may not be a prelude to an early funeral march.

The miseries which come to women soon after marriage with infected husbands could be eliminated if each male applicant for a marriage license were compelled to furnish a physician's certificate of freedom from venereal or mental disease.

A law which required this could be passed if public sentiment demanded it.

Of course, the law must apply to all the states and must be uniform.

Such a law would make young men very careful in their sexual relations, or would impel them, if infected; to use all proper means to get cured.

A requirement of this kind would be in line with that which is made by many parents that a man proposing matrimony to their daughter should take out a policy of life insurance in the daughter's favor.

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[1] American Journal of Clinical Medicine, June, 1912

EDITORIAL.

Books for review, exchanges and contributions—the latter to be contributed to the GAZETTE only and preferably to be typewritten—personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 422 Columbia Road, Dorchester, Boston, Mass.
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BOSTON UNIVERSITY SCHOOL OF MEDICINE AND THE NEW YORK REGENTS.

It will be gratifying to all friends of Boston University School of Medicine, as well as to all who take pride in the standing of our New England educational institutions, to know that the Board of Regents of the State of New York at their stated monthly meeting, held December 12, 1912, formally registered Boston University School of Medicine as an approved school of medicine. It will be recalled by many that in October the Regents rejected the application of the School for re-registration on the ground of incompleteness of the application. The defects in the application have been remedied and the new requirements of the Regents have been complied with, so that the School is now fully reinstated.

"The old order changeth, giving place to the new," and the time evidently is at hand when a change must be made in medical education. Experienced and successful physicians with loyal regard for their alma mater or for a "cause," or with an enthusiast's love for laboratory or clinical work, or with a student's devotion to acquiring and imparting knowledge, may no longer participate in educating the on-coming generations of medical practitioners. This work must be done by paid instructors, otherwise medical schools are not to be considered in good standing. Hippocratic idealism is to be replaced by the "practical" financial standards of the present enlightened and progressive century. It is true that research work and scientific investigations and adequate teaching in the fundamental medical sciences cannot be conducted by those whose time is divided among several interests, and the "older order" must give way to the newer methods. The pressing duty which therefore now confronts medical school faculties is to acquire adequate financial resources to secure and retain the services of trained teachers. The medical school of to-day must do more than teach students and prepare them to practice the art of healing; it must do its share towards increasing the sum total of medical knowledge and increasing the effectiveness of *preventive* and *curative* medicine through research work done by its faculty.

PHYSICAL DISABILITY A MATTER OF COMMUNITY INTEREST.

As physicians, we are, or should be, interested in the effects of the Workingmen's Compensation Law, which went into effect on July first. Physical disability through accidents is becoming each year a greater burden to the community. Until the passage of this law, there has been no satisfactory adjustment of the question who should bear the burden of the disqualified victim. Ultimately, the burden of caring for an injured workingman or his family has fallen upon the community; but the long interval of waiting for the "law's delay," in the settlement of contested suits for physical injuries, has caused great suffering, both to the victim and his family.

The law went into effect July 1, 1912, and the following is a summary of it:

Employees who accept the provisions of the compensation plan, receive in case of death or injury, the following benefits:

(1) Medical and hospital services during the first two weeks after the injury.

(2) Weekly payments where the injury incapacitates the employee for a period exceeding two weeks from earning his full wages.

(a) In case of death resulting from the injury, those wholly dependent upon the injured person get a weekly payment of one-half his average weekly wages (but not more than ten dollars nor less than four dollars a week), for three hundred weeks. Those partly dependent, get lesser amounts, and where there are no dependents, only the expenses of last sickness and burial up to two hundred dollars are required to be paid.

(b) For certain specific injuries the following amounts *which are in addition to all other compensations,* are to be paid.

For the loss of both hands, both feet, one hand and one foot, a reduction to one-tenth of normal vision in both eyes, the employee gets a weekly payment of one-half his average weekly wages, (but not more than ten dollars nor less than four dollars a week), for one hundred weeks.

For loss of either hand, either foot, or either eye, one-half the average weekly wages, (but not more than ten dollars nor less than four dollars a week), for fifty weeks.

For loss of two or more fingers, (including thumbs or toes), at or above the second joint, one-half the average weekly wages, (but not more than ten dollars nor less than four dollars a week), for twenty-five weeks.

For loss of at least one phalange of a finger, thumb or toe, one-half the average weekly wages, (but not more than ten dollars nor less than four dollars a week), for twelve weeks.

(c) For other injuries:

In case of total incapacity, one-half the average weekly wages (but not more than ten dollars nor less than four dollars a week) up to five hundred weeks, or three thousand dollars maximum.

While the incapacity is partial, one-half the difference between his average weekly wages before the injury and the average weekly wages which he is liable to earn thereafter, (but not more than ten dollars a week), for a period not exceeding three hundred weeks as a maximum.

Under the new law, the board has only to determine the amount of compensation due, and the manner in which it shall be paid, and see that it is paid;—no long drawn out litigation to wear out the heart and soul of the widow, and in the end, maybe, meet with defeat.

At first it would appear that the burden of these accidents falls heaviest upon the employer of labor. But such is not the case. Liability insurance protects him amply, (the passage of this act creates a State Liability Association,) and the cost of such insurance is no greater in the long run than the hap-hazard litigation process. The burden to the liability company is carried by an equitable distribution, in the shape of premiums, over all employers of labor. So it is the community at large, as in the case of fires, which bears the burden of industrial accidents.

To get something of an idea how many fatal accidents occur in the Commonwealth of Massachusetts, it is only necessary to consult the records of the newly appointed Industrial Accident Board, which show that the first eighteen days after the law became operative, there was one fatality for each day. The total number of accidents for the same period was four thousand. Under the old regime, the eighteen families would have been left penniless, save in the few instances where a little money had been laid by. Eventually, those families would become public charges, losing self-respect, and disintegrated as cohesive units, thereby endangering their moral stability. Presumably the net result would be, so many units of paupers, so many units of criminals.

The new plan has the tremendous advantage that help is given at the time most needed; is given as a dependable income for a specified time; and, lastly, is given as a just compensation, not as a charity, which tends to pauperize.

Furthermore—and here again it affects the physician—the law provides for the medical and surgical attendance of the injured workman, in a manner to secure the best of hospital treatment. While no injured man, however poor, need ever suffer for want of skilled medical attendance, especially in the urban communities, yet the burden for such gratuitous attendance has not fallen upon the communi-

ty at large, but upon the medical profession alone. There never has been, nor ever will be, any just reason why the physician should be called upon to hear the burden of caring for the hundreds of injured workmen who are yearly brought to the large charity hospitals. While there has been no reason for it, there has always been a willingness to do it, simply from the humanitarian standpoint of our profession; but the time has come when the burden, like others of a commercial character, should be evenly distributed, and not thrust bodily upon one set of people.

THE CLINICAL CONGRESS OF SURGEONS.

A stranger entering the crowded ball-room of the Waldorf-Astoria Hotel, New York, any evening of the week of Nov. 11-16, might have asked the question, "Why this eager, interested audience of two thousand people? What manner of entertainment can hold their undivided attention for five consecutive nights from eight until eleven o'clock!" The answer might have been equally puzzling, "They are seekers after truth."

During that week, some three thousand surgeons flocked to the medical Mecca of this country, for the single purpose of learning how better to care for the sick and disabled who might be placed in their hands. It is doubtful if three thousand men and women could be gathered from any other vocation of human endeavor, and show the same earnestness, the same unflagging zeal and honest purpose to lay hold of facts, as did these surgeons, gathered from all parts of this country.

After standing all day in overcrowded surgical theatres witnessing a perfect deluge of operations (there were over 200 clinics each day, with an average of three demonstrations in each), they swallowed a hasty dinner, in order that they might be in time to get front seats in the ball-room where they could listen to men who had a message of truth. Nor did their zeal abate after closing hour, whether it was eleven o'clock or midnight, for they remained to study the almost bewildering bulletin for the ensuing day, lest they should not be up sufficiently early to see some particular operation or operator in which they were most interested.

New York City, with its wealth of evening entertainments, might have been a wilderness of sand dunes so far as its attracting these men of a single purpose. They had come there to give and get the latest, the most approved, and the most dependable methods of curing the sick by surgical methods, and they were attracted by that only.

The third annual session of the Clinical Congress of Surgeons of North America will mark an epoch in medical history for one reason if for no other,—the enlightenment of the reading public upon things pertaining to medical science. The work of that clinic was of such magnitude and of such phenomenal interest, that it could not "stay out of the papers." The New York press particularly, and the press of the country generally, went into the details of the work with surprising accuracy. While it naturally featured the sensational with undue prominence, yet the net results of the press notices spell benefit to the public and the profession.

The campaign of publicity which the profession has now inaugurated means first the dispelling of many erroneous ideas on medical matters. It shows the fallacy, even the fatality of ignoring the early signs of disease; that if cures are to be effected, the patient must seek aid promptly. Second, that the so-called miraculous cures of to-day are effected, not by occult mysticism, nor by "beliefs," or "absent treatments," but by demonstrable, scientific methods, based upon a thorough knowledge of the laws governing the human body. Third, that there are comparatively few incurable diseases now on the list, provided the cure is undertaken at the early manifestations of the disease.

This meeting with its wide spread publicity has made evident the fact that the profession has taken the public into its confidence, has adopted the "open door policy," has cordially said, "Here are our work-shops; come inside, see what we are doing and endeavoring to do. Now please co-operate with us in bettering the human race."

This newspaper publicity has done much toward re-establishing the profession in its old time position of dignified respectability, only with this difference: whereas formerly it was with a sort of blind adoration for the mystical, now it becomes a deep-rooted respect for a set of men who are working honestly and openly for the mitigation of physical suffering.

VICIOUS "DOPES"

Noxious drugs masquerading under the name of "headache powders" continue to claim victims all over the country; a great deal of this demoralizing "dope" is still sold in Boston. This should not be. If the pure food and drugs act were as effective as Congress intended it to be these dangerous nostrums would not be in the market, and so the desperate sufferer from worry and indigestion would be saved from the folly of taking poison to relieve a pain.

But the law is laxly interpreted and enforced, and the amalgamated order of "dopesters" thrives as of yore.—*Boston Journal.*

OBITUARY

Henry Edwin Spalding, M.D.

Dr. Henry E. Spalding, the patriotic citizen, beloved friend, wise counsellor, experienced practitioner, and respected colleague, died in Hingham, Massachusetts, on July 4th, 1912.

Dr. Spalding was born September 24, 1843, in Lyndeboro, New Hampshire. He came of sturdy New England stock and inherited sterling qualities which helped mould a strong character. His early days were spent among the picturesque hills of southern New Hampshire, from which he must have absorbed the stock of good cheer, youthfulness and vitality which stood him in such good stead during his strenuous life.

He received his preliminary education at McCollom Institute, Mt. Vernon, New Hampshire. At eighteen years of age he was ready for college, but instead of pursuing academic studies he responded to his country's call for help in its hour of need and enlisted in the 13th New Hampshire Volunteers, being the youngest member of his company. He was in the battle of Fredericksburg, after which he contracted malaria, and in due season was discharged on account of physical incapacity. After regaining his health he studied medicine, first at Harvard Medical School and as a student under the popular Dr. J. H. Woodbury, the first Registrar of Boston University School of Medicine. He then went to the New York Homœopathic Medical College, from which he graduated in 1866. He immediately began the practise of his profession in the historical town of Hingham, Massachusetts, where he established his home. He was the first homœopathic physician in Plymouth County, his nearest colleague being in Dorchester, Mass.

Dr. Spalding's popularity and success won for him an extensive practice in Hingham, Hull, Cohasset, and neighboring towns. It was no unusual thing for him to drive forty or sixty miles a day in the discharge of his professional duties. Dr. Samuel H. Spalding became associated with him in 1889 and he opened an office in Boston, returning to Hingham for the summers and keeping his home there.

He was President of the Massachusetts Homœopathic Medical Society in 1883, of the Massachusetts Surgical and Gynæological Society in 1901, of the Boston Homœopathic Society in 1892. In 1876 he delivered a course of lectures in obstetrics, a subject in which he was especially interested, at Boston University School of Medicine. For twenty-three years he occupied the position of Visiting Physician to the Massachusetts Homœopathic Hospital and was also a member of the maternity staff of the Hospital. He was Visiting Physician to the Burrage Summer Hospital for Children and for many years had a clinic for Rectal Diseases at the Homœopathic Medical Dispensary (now the Mass. Homœopathic Hospital Out-Patient Department).

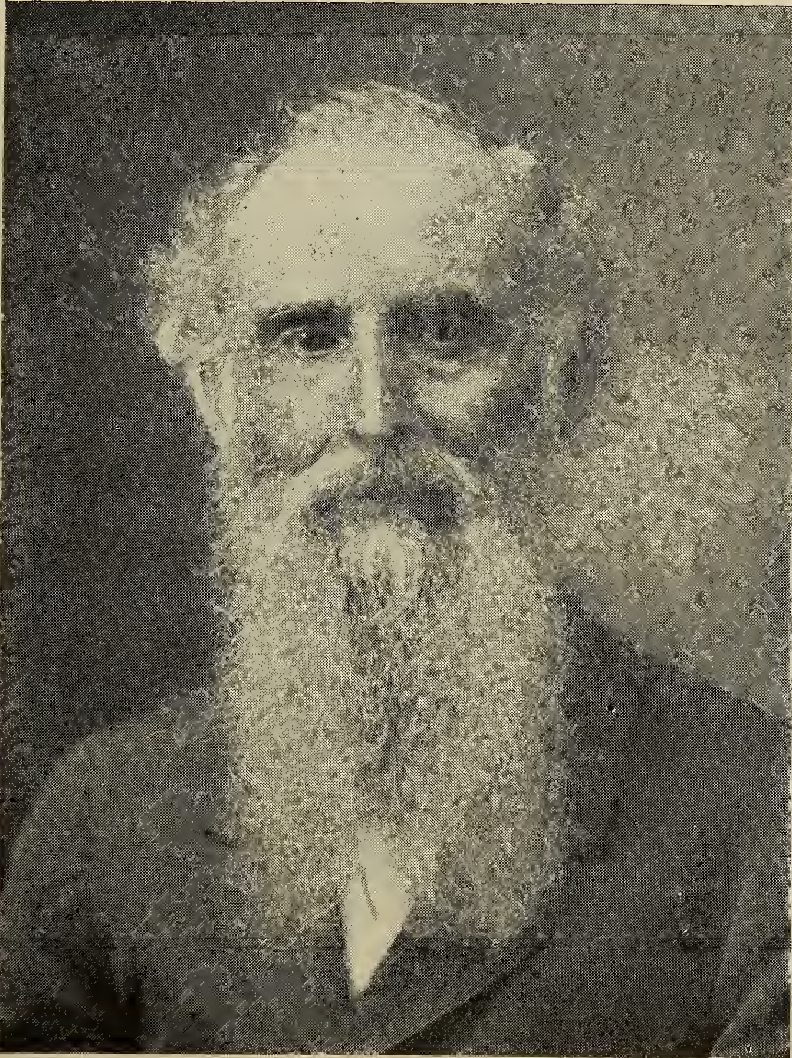
In 1870 he was married to Miss Annie O. Frye of Dorchester, who survives him with three children, Dr. Harry O. Spalding, the Superintendent of Westborough State Hospital, Miss L. M. Spalding, and Mrs. Charles E. Clapp.

In December, 1910, he was stricken with cerebral hemorrhage while at a meeting of the Mass. Surgical and Gynæcological Society and never fully regained his health. A second hemorrhage occurred in April, 1911, and he died July 4th, 1912.

In 1869 he became a member of the American Institute of Homœopathy, attaining the rank of "Senior Member" in 1894. Intensely loyal to the best interests of the Institute he regularly attended its sessions and took an active part in its scientific deliberations. His interest, energy, and ability gained for him the highest esteem, confidence and respect of his colleagues, and he was often asked to serve on important committees. He was intensely devoted to the cause of Homœopathy and was ready always to do his share in any work connected with its advancement.

In addition to a varied and extensive experience as a general practitioner

he devoted special study to obstetrics and certain branches of surgical work, and his attainments were such that aided by a genial, sympathetic manner he became a highly honored and beloved family counsellor, friend and physician. His quick, almost intuitive discernment, his ready grasp of a situation, and his initiative in practical suggestion earned the utmost confidence of a wide circle of professional friends and lay adherents. Nothing which concerned the institutions and societies he was connected with, that concerned the cause of medicine and the greater cause of humanity, appealed to him in vain. He was always ready with suggestions and such help as he could give. His deep convictions, his high ideals of duty and his generous and quick response to its demands made his life an example to all who came within the radius of its influence.



Hiram Bliss Cross, M.D.

Dr. Hiram Bliss Cross died at his home, Jamaica Plain, in Greater Boston, on November first, in his 80th year, following eighteen months of failing health. Age at last conspired with a heart trouble, which he had endured for most of his professional career, to bring his life to a close.

Dr. Cross was born July 9, 1833, in Franklin, New Hampshire, of good New England parentage. After graduating from the village High School in Holderness, N. H., and studying in a private school he entered the New

Hampshire Conference Seminary, now Tilton Seminary. In his twentieth year he began teaching school, keeping on with his studies and attending the Seminary when practicable. He was successful as a teacher and followed that occupation until he entered the Harvard Medical School, under the direction of his uncle, William P. Cross, as preceptor. From the Harvard Medical School he went to the Cleveland Homœopathic Medical College in that city, from which he graduated in February, 1866.

Following his graduation he located in South Boston and soon acquired a good general practice.

In June, 1871, he married Emily Louise Haskins of Concord, N. H., and in September of the same year moved to Jamaica Plain and established his office and residence at 21 Seaverns Avenue, where he has resided ever since, a period of forty-one years, being in practice up to the time of his final illness.

He was a member of the American Institute of Homœopathy and in 1895 was elected Senior, having been a member twenty-five years. He was also a member of the Massachusetts Homœopathic Medical Society, the Boston Homœopathic Medical Society, and the Hahnemann Society of Cleveland, Ohio, of which he was one of the founders. He was also a member of the Eliot Club of Jamaica Plain for many years, and in 1904 was elected an honorary member. He was also an honorary member of the Jamaica Plain W. C. T. U. He was a life member of the Massachusetts Society for the Prevention of Cruelty to Animals, and one of its directors, of the Massachusetts Humane Educational Society, the Society for Prevention of Cruelty to Children, the Massachusetts Total Abstinence Society, the Massachusetts Prison Association Morgan Memorial, Home of Friendless and Fallen Women, and many others of similar purpose.

It may be said without fear of contradiction that rarely does one meet a physician so highly imbued with the ideals of the profession as was Dr. Cross. As a colleague, there are many who will remember his kindly, practical and unselfish advice. As a prescriber of drugs there were few more capable. Inheriting the frailest of bodies, he was necessarily restricted from following the broader paths in medicine which would have made him a leader in the profession.

As a citizen he was deeply interested in all material and moral progress, philanthropies and reforms, to which he gave generously of his time and means for their support. The great social problems appealed to him strongly, and he recognized the need of their fundamental treatment.

Naturally of retiring manner, and modest in his expressions, yet his moral convictions were so strong he would stand alone for them if it seemed to be his duty. His outlook was broad, and he was considerate of the opinions of those who differed from him. He tried to see all debatable questions from every viewpoint, and willingly followed where truth seemed to lead.

As a companion, counselor and friend, Dr. Cross was a rare personality. He had read widely, observed closely and thought much, and with his vein of quiet humor, he was qualified to be both instructive and entertaining. His counsels were sought by many who went forth with clearer vision and renewed purpose to meet their perplexities.

It may truly be said, "In him the world has lost a friend."

Walter Henry Tobey, M.D.

Dr. Walter H. Tobey was born in Keeseville, New York, on December 2, 1847, and died very suddenly of angina pectoris on November 23, 1912.

Dr. Tobey was a graduate of the New York Homœopathic Medical College, class of 1873. After his graduation he practised medicine with the late Dr. H .A. Houghton in Keeseville for two years, then came to Boston in 1876 and practised here continuously until the day of his death. He was married in 1884 to Miss Mary Baber of Keeseville. The union resulted in three children, all of whom, with Mrs. Tobey, survive him.

Dr. Tobey was a member of the American Institute of Homœopathy, the Massachusetts Homœopathic Medical Society and the Massachusetts Surgical and Gynæcological Society, and was at one time president of the last named society. He was also a prominent member of the Boston Art Club. His medical practice was extensive, and he was greatly beloved by his patients. He was devoted to his home and his family and was an ideal husband and father.

Edmund H. Packer, M.D.

Dr. Edmund H. Packer, one of the oldest and best known homœopathic physicians in Massachusetts, was born in Newark, Vermont, May 15, 1844, and died October 10, 1912, at his home in Lowell. His parents were Dr. J. Q. A. Packer and Lovina N. Packer of Marshfield, Vermont.

Dr. Packer received a common school education in his native town and also attended the select school of Edwin Burnes. He was fitted for college by his uncle, Rev. David Packer, M.D., who was at that time a minister and practicing physician.

In August, 1864, he enlisted in the Third Vermont light battery, and served in front of Petersburg until the surrender of General Lee. He was mustered out of service at Burlington, Vt., in June, 1865.

He first began the study of medicine with his uncle, Dr. David Packer. He matriculated at Hahnemann Medical College of Philadelphia in 1865, and in 1867 received his degree of Doctor of Medicine. Returning to Lowell, he again entered the office of his uncle, and remained in active practice with him for one year. He then opened an office of his own, continuing in practice until 1870-71, when he took a post-graduate course at his old alma mater. Since then until his death he continued to practice in Lowell. He became a member of the American Institute of Homœopathy in 1869, and was a member of the Massachusetts Homœopathic Medical Society and of the Lowell Hahnemann Society, and was on the staff of Lowell General Hospital.

Dr. Packer is survived by his wife, a son, Henry W. Packer, one brother, Silas H. Packer, and five sisters.

Dr. Packer was a member of Kilwinning Lodge, Mount Horeb Royal Arch chapter, Ahasuerus Council of Royal and Select Masters, Pilgrim Commandery of Knights Templars, Boston Consistory, Mount Calvary chapter of Rose Croix and Lowell Council Princes of Jerusalem.

It was my privilege as a young practitioner, many years ago, to learn to know Dr. Packer. As the years have gone by, and our knowledge of men has extended, and we compare his methods with others, we have found him to be a wise counsellor. Always ready to advise, and to advise wisely, and in no time of difficulty, or danger, was he consulted without benefit. He always held fast to that which had proven of value, in his many years of experience and practise.

He was a careful, exact, and intelligent prescriber; a thoughtful and far-seeing observer of the progress and outcome of conditions with which he came in contact, making him strong in his profession and successful as a physician.

We have lost a friend and brother physician. His patients have lost a valued helper and counsellor, while he has gained the reward that ever awaits a life of conscientious devotion to duty.

The good that such a man accomplishes cannot be estimated. It is certain that it lives long after he is gone. The manifestations of sorrow heard at his funeral were evidences of the high regard in which he was held, and of the sense of loss his death brought to the community at large.

C. H. Leland, M.D.

Job Everett Luscombe, M.D.

Dr. J. Everett Luscombe of Fitchburg, Mass., died April 10, 1912. He was born at Taunton, Mass., March 24, 1845, the son of Job Godfrey and Eliza (Park) Luscombe. He attended the public schools of his native city, and later, upon the advice of his father, he learned the dry goods business

and opened a store in Plymouth, Mass., where he resided for nearly fifteen years. In 1882 his youthful desire to become a physician reasserted itself and he sold out his store and began the study of medicine at Boston University School of Medicine, from which he was graduated in the class of 1885. He then opened an office in Fitchburg, Mass., continuing there in the practice of his profession for twenty-seven years. But medicine did not occupy all his thought. He was deeply interested in the activities of the Methodist church, which he joined in early life at Taunton. For thirteen years he was superintendent of the Sunday School, for five years president of the Epworth League, and at all times he was an active, devoted worker. He also performed his full share of civic duties; for three years he served as a member of the Fitchburg Common Council and for the same length of time as a member of the School Committee. He was interested in the work of the Y. M. C. A. and had served upon its board of directors. He was a member of the Massachusetts Homœopathic Medical Society and at one time president of what is now the Worcester County District of that Society, also a member of the Massachusetts Surgical and Gynæcological Society, of the Masonic fraternity and Past Noble Grand of Mount Vernon Lodge I. O. O. F.

Dr. Luscombe is survived by a widow and one daughter.

COMMITTEE ON MASSACHUSETTS HOMŒOPATHIC HOSPITAL

WM. O. MANN, M.D., CHAIRMAN

I will give you a brief summary of the growth of the work of the Hospital in the ten years past. The number of patients treated in the main Hospital has increased in this period from 2,376, to 5,032 in 1911 and the daily average number of patients has increased from 146 to 216. In 1911, the number of operations performed was 3,214 against 1,762 ten years ago. The cost of maintaining the Hospital has increased from $118,000 to $159,000.

At the Out-Patient Department, the attendance at the clinics has fallen off in six years from 42,000 to 39,000. This is the only department of the Hospital which shows a decrease in the amount of work accomplished, and this is due, I believe, to an insufficient number of physicians to care for the clinics properly.

New buildings have been added to the facilities of the Hospital during this period. In 1908, the Haynes Memorial was erected, with a capacity of 150 patients, restricted to those suffering from contagious diseases. In March, 1912, we opened the Evans Memorial for Clinical Research and Preventive Medicine.

Our great need at present is for a new maternity building. The number of patients treated in this department has more than doubled within the past few years, and we are now obliged to deny admission to applicants because of the restricted quarters available. A maternity building, in addition to the advantage of segregating this class of cases, would permit us to devote the beds which they now occupy to an increased number of medical and surgical patients.

During the past year, the facilities of the X-ray department have been improved by the purchase and installation of new X-ray apparatus. This is the most powerful that could be purchased, and we are now able to care for all the work that comes to us in this line.

SOCIETIES

Massachusetts Homœopathic Medical Society

The Seventy-Second Semi-Annual Meeting of the Massachusetts Homœopathic Medical Society was held at the Massachusetts Homœopathic Hospital on October 8 and 9, 1912. All homœopathic physicians in Massachusetts and members of the other State Societies in New England were invited, and the meeting was one of the best attended and most interesting that has yet been held, many visiting physicians from the other States being present.

Tuesday, October, 8, was devoted to the following clinics at the Hospital amphitheatre and Evans Memorial Building, and were well attended:

Surgical Clinic.—Horace Packard, M.D., Boston.

Orthopedic Clinic.—Alonzo G. Howard, M.D., Boston.

Clinic: Finger Extirpation of Tonsils.—Harold A. Foster, M.D., Rhinologist to the Metropolitan and Hahnemann Hospitals, New York City.

Clinic on Cardiac Cases.—Fred S. Piper, M.D., Lexington.

Medical Clinic.—Charles H. Thomas, M.D., Cambridge.

Dermatological Clinic.—John L. Coffin, M.D., Boston.

Nervous Clinic.—Ernest M. Jordan, M.D., Boston.

On Tuesday evening Dr. Gregory Cole of New York presented a most interesting paper on "The Radiographic Diagnosis of Gastro-Intestinal Lesions" illustrated by the stereopticon and kinetoscope. The auditorium in the Evans Memorial Building was filled to its fullest seating capacity by an audience which followed Dr. Cole's talk most closely, as he offered new methods in the diagnosis of gastro-intestinal lesions, illustrating the points of his lecture with remarkable x-ray pictures. Motion pictures of the stomach in the process of digestion made a fitting climax to this remarkable paper. Dr. Cole's lecture was discussed by

Dr. Arial W. George, Harvard Medical School, Roentgenologist Children's Hospital,
Dr. Walter J. Dodd, Roentgen Ray Dept. Harvard Medical School.
Dr. C. L. Scudder, Massachusetts General Hospital.
Dr. F. B. Granger, Professor of Radiology at Tufts Medical School.
Dr. Percy G. Brown, Professor of Radiology Harvard University.
Dr. Fraenkel, of Germany.

The Wednesday session opened with a business meeting at which encouraging reports of conditions at the Medical School and Hospital were made by the respective committees on these institutions.

Drs. Alice S. Cutler, Westborough, and Everett W. Coates, Boston, were admitted to membership.

The remainder of the Wednesday session was devoted to the following interesting papers:

Consideration of Pain in Disease of the Biliary Tract, Stomach, and Appendix—Charles T. Howard, M.D., Boston.

Diet in Gastric Ulcer. A Review.—Frederick B. Percy, M.D., Boston.

Annual Oration.—George S. Adams, M.D., Stamford, Conn.

Negative Conditions of the Alimentary Tract.—Frank W. Patch, M.D., Framingham.

Indications for the Homœopathic Remedies commonly used in Disease of the Digestive Tract.—F. Mason Padelford, M.D., Fall River.

General Considerations of Operation for Gastric Ulcer and Pyloric Ulcer.—Dewitt G. Wilcox, M.D., Boston.

Post-Operative History of Cases of Gastric Ulcer.—Clarence Crane, M.D., Boston.

These papers were discussed by

Henry A. Whitmarsh, M.D., Providence, R. I.
J. Herbert Moore, M.D., Brookline,
William F. Wesselhoeft, M.D., Boston,
J. Emmons Briggs, M.D., Boston,
Frances M. Morris, M.D., Boston,
J. Arnold Rockwell, M.D., Cambridge,

On Wednesday evening a reception was tendered at the Boston Art Club by the President of the Society, Dr. George R. Southwick, to members of the New England Societies and their wives. Nearly two hundred were present, including many physicians and their wives from the other State Societies. The evening was purely social, and enjoyed by all.

Boston Section, Massachusetts Homœopathic Medical Society

The regular monthly meeting of the Boston Section of the Massachusetts Homœopathic Medical Society was held on the evening of November 7, in the auditorium of the Evans Memorial Department of the Massachusetts Homœopathic Hospital.

The evening being unusually stormy the attendance was small, but the program was of great interest and was as follows:

The Physiology of the Ductless Gland. Illustrated by stereopticon. Frederick P. Batchelder, M. D.

Surgery of the Ductless Gland. George R. Southwick, M.D.

The following candidates were elected to membership:

Everett Coates, M.D., Westborough.	Harold E. Diehl, M.D., Quincy.
Ralph O. Dodge, M.D., Hyde Park.	Oscar L. Spencer, M.D., Lynn.

Southern Homœopathic Medical Association

The Southern Homœopathic Medical Association met in Richmond, Va., October 15-16-17, and elected the following officers for the ensuing year:

Dr. Wellford B. Lorraine,	Richmond, Va.	President.
Dr. H. E. Koons,	Danville, Va.	1st Vice President.
Dr. J. Burnie Griffin,	St. Augustine, Fla.	2nd Vice President.
Dr. Myron A. Newman,	Norfolk, Va.rdlu	reasurer.
Dr. Lee Norman,	Louisville, Ky.	Secretary.

This was one of the most enthusiastic and successful meetings ever held by the organization. New life was instilled, many new members were added, and every one was impressed with the bright future of the association.

The opening exercises were held in the Jefferson Hotel Auditorium on the evening of the first day. Dr. Royal S. Copeland of New York City delivered the formal address, "What is Homœopathy?" The attendance was large. The papers presented covered all the field of medicine and surgery.

Dr. Ralph Bernstien of Philadelphia gave a stereoscopic skin clinic and reflectoscopic lantern demonstration of "The More Common Skin Diseases of Childhood, Their Recognition and Treatment." The session was well attended and hearty discussion entered into.

The paper by Dr. Bernard S. Arnulphy of Paris, France, on "The Istonic Plasma of Professor Reni de Quinton in Treatment of Children," was read by Dr. Harry B. Baker of Richmond. This opened up a new line of thought. The subject was well presented and caused much favorable comment and discussion.

Dr. E. Stillman Bailey of Chicago, read a paper on "Radium as a Remedy in Carcinoma." The most intense interest was manifested. The Doctor has for some time been interested in this subject and gave some very excellent results. His paper commanded the undivided attention of a large audience.

Dr. William R. King of Washington, D.C., read an interesting paper on "Imbalance of Extraneous Eye Muscles." He recounted numerous cases where extraordinary conditions have resulted from strain on the muscles of the eye.

So it went on for three days, a large number of papers being presented and fully discussed.

The social features were an automobile ride to the abattoir of the Valentine Meat Juice Company. After inspection of the abattoir, members of the Association were driven to the Valentine Museum. After viewing the collections in the museum, luncheon was served. Oct. 17th the members and guests were taken for an automobile ride through Richmond, its suburbs

and parks. Thursday evening, the members and guests were entertained at a banquet by the newly elected President, Dr. Wellford B. Lorraine. Dr. Geo. Bagby officiated as toastmaster. Dr. A. Leigh Monroe of Miami, Fla., gave some reminiscences which were heartily enjoyed.

The meeting was one long to be remembered, and too much cannot be said for the Local Committee on Arrangements, of which Dr. Lorraine was Chairman.

Application blanks and all other information regarding the Association may be obtained from the Secretary,

Lee Norman, 712 W. Broadway, Louisville, Ky.

Pennsylvania State Notes

The Convention of the Southern Homœopathic Medical Association, which was in session at the Hotel Jefferson, Richmond, Va., on October 14th, 15th and 16th, adjourned to meet next year at Atlanta, Ga.

Dr. W. B. Lorraine, of Richmond, Va., was elected president of the association. Other officers chosen were: First Vice-President, Dr. H. E. Koons, Danville, Va.; Second Vice-President, Dr. J. B. Griffin, St. Augustine, Fla.; Secretary, Dr. Lee Norman, Louisville, Ky.; Treasurer, Dr. W. A. Newman, Norfolk, Va. Dr. Norman was the only officer re-elected.

The convention brought to Richmond about seventy-five physicians, representing ten Southern States. After the conclusion of the program all of the doctors visited points of interest about the city in automobiles. A luncheon in honor of the delegates was given in Valentine Museum.

The Interstate Federation of Homœopathic Medical Societies of New York and Pennsylvania, held its ninth annual meeting at the Hotel Rathbun, Elmira, N. Y. There were about sixty-five physicians from various cities of the two states in attendance.

Among the Philadelphia doctors present were: Dr. Gilbert J. Palen, President of the Homœopathic Society of the State of Pennsylvania, and Professor of Otology, at Hahnemann Medical College, and Dr. Ralph Bernstein, Clinical Instructor on Skin Diseases, Hahnemann Medical College.

The opening session was held at two o'clock in the afternoon, when an interesting and instructive program was presented. At seven o'clock dinner was served to the society members in the private dining room. The evening sessions opened in the hotel parlors at seven-thirty o'clock.

The program of the afternoon and evening was carried out by Richard O. Gregory, M.D., Elmira, N. Y.; F. C. Robbins, M.D., Hornell, N. Y.; E. H. Hill, M.D., Pittston, Pa.; R. V. White, M.D., Scranton, Pa.; W. H. Proctor, M.D., Corning, N. Y.; John E. Wilson, M.D., New York; S. C. Winters, M.D., Binghamton, N. Y.; Gilbert J. Palen, Philadelphia; A. W. Bailey, M.D., Atlantic City, N. J.; John N. Lee, M.D., Rochester, N. Y.; Ralph Bernstein, M.D., Philadelphia; J. L. Peck, M.D., Scranton, Pa.; W. N. Hilton, M.D., Waverly, Pa.; H. B. Ware, M.D., Scranton, Pa.; Frank T. Bascom, M.D., Rochester, N. Y.

BOOK REVIEWS

Stereoscopic Treatment of Heterophoria and Heterotropia, Designed to accompany the Phoro-optometer Stereoscope and the Wells Selection of Stereoscopic Charts, by David W. Wells, M.D., Member of A. M. A. and A. I. H.; Associate Professor of Ophthalmology, Boston University School of Medicine; Ophthalmic Surgeon, Massachusetts Homœopathic Hospital, Boston; Oculist Newton (Mass.) Hospital; Author of "Psychology Applied to Medicine." 75 pp., with numerous illustrations. New York: E. B. Meyrowitz, Publisher.

As the title indicates, this little book is written to accompany and explain the use of the photo-optometer stereoscope as devised by the author, and the system of charts original with him or selected and modified from the works

of other investigators in this line of study. The work is sufficiently technical to appeal chiefly to ophthalmologists and concerns a subject upon which there is great diversity of opinion among recognized practitioners. The author believes himself conservative in advocating this method of treatment and that he occupies a middle ground between those enthusiasts who make most extravagant claims for the clinical results achieved by their favored line of treatment for heterophoria and the somewhat large number of extremely conservative ophthalmologists who neglect the whole subject of muscle insufficiency, unless a heterotropia or actual squint exists. He believes that in many cases of deviation the defect is due to the lack of development of the fusion faculty and that this may be developed by education through the use of the system here advocated. Several chapters are devoted to a brief but very lucid description of fundamental facts and theories. Binocular vision, the law of corresponding points, semi-decussation, the fusion faculty, orthophoria, heterophoria, the various recognized tests for the latter, with the causes leading to it and the accompanying symptoms are briefly discussed. A chapter is devoted to a description of the principal methods that have been used in treating heterophoria including the origin and history of the stereoscopic method. The remainder of the book is devoted to a detailed description of the method which the author has for eight years used, developed and advocated. Whether the reader can agree with the whole or only a part of the author's reasoning and of the theories logically leading to the development of his system of treatment, he must agree that a comprehensive study and knowledge is shown of a very intricate subject, that the detailed treatment of the several forms of heterophoria is given in a clear and forceful manner, and, we believe, that another step at least has been made toward that goal, the attainment of which has been long and earnestly sought, by numerous investigators. *A. W. H.*

A Text-Book of Human Physiology, including a section on Physiologic Apparatus. By Albert B. Brubaker, A.M., M.D. 4th edition, revised and enlarged. With 1 colored plate and 377 illustrations. Price, $3.00. P. Blakiston's Son Co., 1012 Walnut St., Philadelphia. 1912.

It is a matter of encouragement that we must needs have a new work on physiology every few years. Were this not the case, we should of necessity conclude that either we had learned it all, or else that we had ceased to observe and discover. Had there been no new physiology this year, we should have to resort to our journals and reprints to gain the latest authenticated knowledge concerning the Adrenals, the Pituitary gland, the Auscultory method of determining blood pressure, the venous pulse, vescosity, specific gravity and coagulability of the blood, mechanical movements of the stomach and cardiac muscle, certain new cortical phenomena, and many other subjects which are either new or must be learned over again. Dr. Brubaker has made all this new matter inclusive in his last edition, and it makes very interesting reading. His conclusions regarding the effects of alcohol on the opsonic index do not, however, tally with the latest investigations of George Rubin, Evarts A. Graham and Chas. E. Stewart.

A Clinical Manual of the Malformations and Congenital Diseases of the Fœtus. By Professor Dr. R. Birnbaum, Chief Physician to the University Clinic for Women at Göttingen. Translated and annotated by G. Blacker, M.D., B.S., F.R.C.P., F.R.C.S, With 50 illustrations in the text, and 8 plates. Price, $5.00. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut St., 1912.

This work is somewhat out of the ordinary. It contains much valuable information to the embryologist and biologist. To the surgeon, it is of value in accounting for some of the malformations which he is called upon to correct. To the obstetric surgeon, it is of particular value, in that a minute study is made of the causes operating in the production of the various defects and malformations to which the fœtus is subject. The chapter upon

"Obstetric Injuries to the Skull, and Hydrocephalus" are well worth the price of the book to any physician doing an obstetric practice. The only fault to be found with the workmanship of the book is the glazed paper upon which it is printed. We have frequently voiced our protest upon this matter. There is nothing so trying to eyes in book reading as a paper which has a sheen sufficient to cast a reflection, and must therefore be held in a certain position to avoid a direct light. We plead for a paper with a dull finish.

Old Age Deferred. The Causes of Old Age and Its Postponement by Hygienic and Therapeutic Measures. By Arnold Lorand, M.D., Carlsbad, Austria. Third edition. Translated, with additions, by the Author from the Third German Edition. F. A. Davis Co., Philadelphia. Price, $2.50. 1912.

The author says, "Whoever takes up this work with the idea that the aged can be transformed into sprightly adolescents, will be disappointed." That is not the aim of the author, but rather to show, by reasonableness in eating, drinking, exercise, sleep, work, and cohabitation, one need not grow old at fifty, or even sixty. We should live, he says, to be a hundred, whereas we now die at sixty. Dr. Lorand lays much stress upon the function of the ductless glands, and their influence upon longevity; indeed, that thought seems uppermost throughout the work, those glands being the Thyroid, Ovaries, Testicles, Liver, Kidneys, Pancreas, Adrenals, and Pituitary Body. The chapters upon alcohol, tea, coffee, and tobacco, and their influence upon physical efficiency and long life, are clear and convincing. Frenchman though he is, he denounces alcohol and tobacco as deterrent factors in longevity. "How to determine the probable duration of life," is a chapter worth reading; and the closing chapter, "a few hints on youthful appearance," is not written for the vain man or woman, but for all of us. It is a very readable book.

Further Researches into Induced Cell-Reproduction and Cancer. Vol. 2. Consisting of papers by H. C. Ross, M.R.C.S., etc., J. W. Cropper, M.B., etc., and E. H. Ross, M.R.C.S., etc. With illustrations. Price, $1.00. P. Blakiston's Son and Co., 1012 Walnut St., Philadelphia. April, 1912.

This book is for the purpose of elucidating the theory that cell proliferation and possibly cell development are directly brought about by chemical agents, set free by cell death. It consists of detailing experiments made for the purpose of demonstrating the truth of these premises. To the laboratory student, the pathologist, the surgeon, and the seeker after scientific truths, the work is extremely interesting. Any light which can be thrown upon that obscure question of cancer production, cannot fail of a welcome.

Boericke & Runyon, the well known homœopathic medical publishers of 14 West 38th Street, New York, announce two new books just issued from the press:

The **5th Edition of Boericke's Materia Medica,** thoroughly revised and up-to-date, by William Boericke, M.D., with repertory re-written, enlarged and with the addition of all new remedies introduced since the last edition, such as Radium, X-Rays, Lecithin, Thymol, Justicia, etc., By Oscar Boericke, M.D., Philadelphia, Pa. The book contains 1155 pages, printed on finest bible paper and is bound in flexible morocco. It is a convenient size for the pocket, and is *the only book that contains all the characteristic and verified symptoms of the Homœopathic Materia Medica.* Sent postpaid on receipt of price, $3.50. Write for sample pages.

The **Clinical Guide,** by George F. Laidlaw, M.D., is designed to be a practical companion for students and physicians. Dr. Laidlaw describes the tests that he uses in the examination of urine, gastric contents, blood and sputum, tests that are simple and sanctioned by his long experience. This book contains 152 pages, and is bound in cloth. Will be sent postpaid on receipt of price, $1.50

REVIEWS OF MEDICAL JOURNALS

Medical Review of Reviews. October, 1912

1. *Remedial Conditions of the Feeble-Minded and Backward*—W. S. Cornell, M.D., Philadelphia.

The problem of remedial conditions in *dull* children is theoretically simple, because here only the common defects of malnutrition, defective vision and defective hearing, and the social defect of poor home conditions need be considered. In the case of the feeble-minded, however, at the present time no means are known whereby such a one may be developed into a normal individual. Cretins may be cured or greatly improved, but as these constitute but a fraction of one per cent of all the feeble-minded they may be considered negligible.

The different theories of causation of feeble-mindedness are: (1) Exhaustion of nervous vitality. (2) Exhaustion of general vitality. (3) Abnormality of the cellular elements throughout the body, arising from some abnormality in one or both parent germ cells. (4) Underfunction of one or more of the glands of internal secretion. (5) Origin through miscellaneous causes such as organic brain injury, cortical sclerosis, hydrocephalus, intoxication by syphilis or alcohol, lack of thyroid and general degeneracy.

The hope for mental improvement of the feeble-minded lies in the school-room, shop and garden rather than in the hospital. The tests devised by Professor Binet bring out the interesting fact that in spite of the very best efforts along educational lines the rate of improvement is very slow and the feeble-minded child drops further and further behind.

When we consider the treatment of the simply dull children we pursue the same course as in the feeble-minded, clearing away such obstacles as poor nutrition and defects of the special senses with individual attention in order that difficulties may be overcome, the training of the senses to better acuteness through the systematic exercises, the training of the motor side through physical and manual training and the assistance of the subnormal intellect by the use of measures involving association. Experience has shown that dull children under improved conditions of health, environment and school training may be greatly improved mentally.

2. *The New Art of Ventilation. Some Principles which Follow from Recent Physiological Research.* C. E. A. Winslow, New York.

The author speaks of the symptoms occasioned by poorly ventilated conditions, or large number of people in relatively small rooms as occasioned by heat and moisture rather than accumulation of carbon dioxide. Experiment has shown that with heat and moisture reduced large percentages of carbon dioxide may be endured without ill effects. The author goes on to indicate some of the principles of good ventilation based on this new knowledge.

His first principle of good ventilation involves lowering the temperature of the room by cool air. The most essential point in ventilation which overshadows all others is the removal of excess heat and moisture. The common method of ventilation by means of air at or above the temperature of the room is criticised. The fault of most ventilating systems is that whereas provision is made for furnishing extra heat should the room become cool, little or no provision is made for the carrying off of excess heat.

The author's second principle is that heated air should be removed from above and fresh cool air admitted from below. The commonest forms of ventilation are arranged the reverse of this with inlets at the ceiling and outlets at the floor. By this arrangement as soon as the room temperature rises above that of the incoming air this system of ventilation fails completely.

The third principle is that incoming cool air should be tempered, unless the number of occupants in a room is small. The fourth principle is that this tempered cool air must be evenly distributed throughout the ventilation space.

Up to this time little has been done to temper air coming into our houses in summer, a very practical possibility.

3. *Neurasthenia and Psychasthenia; Differential Diagnosis.* S. T. Rucker, M.D., Memphis, Tenn.

NEURASTHENIA

(1) Physical health and bodily strength often depreciated.
(2) Gastro-intestinal disturbance with emaciation.
(3) Muscular weakness and chronic symptoms of fatigue.
(4) A state of nervous weakness with inability to sustain continued effort.
(5) More or less disturbance of circulation.
(6) Insomnia a constant and annoying symptom.
(7) Headache and many vague nervous pains.
(8) Doubts and fears vary and change.

PSYCHASTHENIA

(1) Physical health good, as a rule.
(2) No gastro-intestinal disturbances. Appetite and digestion good.
(3) Muscular strength and no fatigue symptoms.
(4) No nervous or physical weakness, but maybe a morbid fear of becoming weak.
(5) Circulation good and blood-pressure normal.
(6) Sleeps well.
(7) No headache and seldom complains of any pain.
(8) Fears fixed and constant.

Some symptoms common to both disorders are lack of confidence, a weak will, imperative ideas, anxiety, doubts, fears and morbid apprehension.

The treatment of nervous disorders, like neurasthenia and hysteria, requires such measures as diet, baths, electricity massage, and drugs to invigorate and restore bodily health, while the treatment of psychasthenia is dependent largely on psychotherapy.

4. *The Treatment of Gonorrheal Synovitis.* Samuel Blumefield, M.D., New York.

(1) The removal of the cause in the treatment of accompanying synovitis.
(2) Constitutional treatment. Regulation of diet, medicines, antigonococcic vaccines.
(3) Local treatment of joints by immobilization, Biers hyperemia.

5. *The Folly of "Investment Insurance."* George W. Hopkins, M.D., Cleveland, Ohio.

The author of this paper believes that only straight life insurance is the proper kind of insurance for every man. In very convincing manner he presents irrefutable evidence that cash surrender and loan values add unduly to the cost of legitimate life insurance and should be abolished. "Pure life insurance" is one of the greatest blessings ever conferred on man, but "investment life insurance" is one of the greatest frauds ever conceived. The honest life insurance agent is hardly second to the priest or physician in the nobility of his calling, and we should, by law, lift the great stone of "Investment Life Insurance Humbug" from his back, even though he has carried it so long that he thinks he cannot keep his feet on the ground without it.

In his appendix the writer presents three "illustration of results" in

which he demonstrates that the ordinary life policy pays twice the interest on money invested that the Twenty-year Endowment "finest investment policy" pays.

An interesting case is cited, viz.: "C" and "D" both age 40; "C" buys a $1,000 twenty-year endowment policy at $51 per year, while "D" buys a $1,000 twenty-year term policy at $16.00 per year. Both men die in the nineteenth year. Each family receives $1,000 although "C" paid in $969 while "D" had paid in only $304. Yet "C" was told that his $969 policy was a "fine investment policy."

Assuredly, if "C" had lived twenty years, his policy would have made a better showing, but if men were sure of living twenty years they certainly would not buy any kind of life insurance. A man can find much better investment opportunities in local mortgages than by making use of investment insurance.

Medical Psychology

Some Recent Criticisms of Psychoanalysis. J. Victor Haberman, M.D.

An excellent review of the criticisms of Isserlin in an article in Ergebuisse der Neurologie und Psychiatrie.

Isserlin does not believe that psychoanalysis is *ever* indicated or should ever be advised. This review is well worth reading by everyone, psychoanalyst or not. *D. F. D.*

The Clinique. October, 1912

1. *Necessity of Knowledge of Bacteriology to the General Practitioner,* Watters, W. H.
   A plea for a more adequate knowledge of bacteriology on the part of practicing physicians. By increasing his understanding of the bacteriological causes of disease the physician not only becomes a better diagnostician, but necessarily better understands the various phenomena of infections.
2. *The Eye-Glass Fakir.* Foster, F. C.
   The author takes up the danger to the public of opticians, optometrists, etc., who make their stores, offices and their customers patients; the advantage of examination of the eyes of school children by trained oculists; colleges of optics or optometry as diploma mills. The Murine Eye Remedy is a solution of borax, 12 grains to the ounce, plus a trace of berberin or some golden seal preparation. The public pay $1.00 an ounce for what they could buy for five cents a gallon.
3. *Some Relations of General Diseases to Diseases of the Ear.* Lewy, A.
   Aural complications of scarlet fever, pneumonia, diphtheria, mumps, typhoid fever, influenza, cerebro-spinal meningitis, syphilis, tuberculosis, nephritis, anæmia and old age.
4. *Nux Moschata.* Dieust, G. E.
   Consideration of mentality, desires and aversions, modalities, tissue changes and sensations.
5. *The Surgical Aspect of Obstetrics.* Humphrey, A.
6. *A List of Diseases in which X-Ray Treatment is of Value.* Grubbe, E. H.

C. W.

The Pacific Coast Journal of Homœopathy. October

1. *Arnica Montana.* Boynton, S. R.
2. *Functional Disorders of the Heart.* Bryant, C. P.
3. *The Significance of Albumen in the Urine with and without Casts.* Cutting, C. T.
4. *The Surgical Treatment of Pancreatitis, with Report of a Case.* Miller, B. E.

C. W.

The Homœopathician. October

1. *Selection of the Indicated Remedy by Use of the Repertory.* Schwartz, E.
2. *Tuberculinum Cases.* Green, J. M. *C. W.*

The Critique. October

1. *Rabies, the Pasteur Treatment, Report of a Case.* Bartz, L. E.
   Local symptoms seven days after the bite of a dog suffering from the initial stage of rabies. The dog later went mad, died and was autopsied. Postmorten showed negri bodies in the hippocampus. Pasteur treatment began on seventh day after bite. Twenty-six doses given. Recovery.
2. *Seneco Aurens.* (Liferoot.) Enos, C. W.
   Pharmacology, history and clinical observations.
3. *The Induction of Premature Labor and its Indications.* Grossback, H.
4. *Ectopic Pregnancy.* Enos, C.

C. W.

Iowa Homœopathic Journal. September, 1912

1. *Homœopathic Remedies in Acute Anterior Polio-myelitis.* Alexander E. L.
   A very brief consideration of aconite, Kali Phos, Secala Coronutum and cocculus indicus.

Hahnemannian Monthly. August

1. *Personal Experiences with Salvarsan in the Treatment of Syphilis.* Belting, A. W.
2. *The Social Evil—The Duty of the Physician.* Wood, J. C.
3. *The Diagnosis of Gastric Ulcer.* Sheen, R.
4. *Remarks on the Diagnosis of Typhoid Fever.* Bringman, M. S.
5. *Tonsilitis.* Guernsey, W. F.
6. *The Value of Homœopathic Remedies in Post-Operative Cases.* McClelland, J. H.
7. *The Value of Homœopathic Remedies in Diseases of the Heart and Lungs.* Clapp, H. C.
   The author, after stating that nineteen out of twenty of his prescriptions are homœopathic, takes up briefly indications and some contra indications of drugs as used by the old school. He chides the allopaths on their prescriptions of nauseating or innocuous compounds as working far more through the imagination than our "sugar pills." He commends Heroin as of occasional value in coughs. In asthma he praises 5 grain doses of K. I. He is convinced that it acts more than as a placabo, as shown by his experience in using it with and without the homœopathic remedy. If it works well without the homœopathic remedy, the reviewer questions the pharmacological indications for the additional prescription according to the "law" of similars. Although "The Cyclopedia of Drug Pathogenesis" does not give us any picture resembling asthma under K. I., it is possible from the light of recent investigations in this drug to argue with Sajous that its beneficial action in this disease is due to its stimulating the production of auto-antitoxin. If its effect is dynamic it would seem best to remain true to the single remedy.
8. *The Homœopathic Physician of To-day.* Cobb, J. P.
9. *The Treatment of Nervous Diseases by Occupational Methods.* Everett, E. A.
10. *Ethics.* Nall, P. A.
11. *A Study of Hydrastis.* McKinstry, F. P.
    The author takes up the pharmaceutics of this well known drug, and then after entering into its history in the homœopathic school, and quotations from old school authors, he discusses its indications and value in practice, leaving the reader better informed in regard to this valuable drug.
12. *Odds and Ends; Therapeutic and Diagnostic.* Bartlett, C.
    1. Asthma. 2. Thuja in Papilloma. 3. The Early Diagnosis of Pulmonary Tuberculosis. 4. A Generalization in Diagnosis. 5. The Danger of placing

implicit confidence upon cardinal Symptoms on the one hand, and neglecting them on the other. 6. Neuralgia and Quinine (blood not examined and Arsenic given in conjunction with the quinine. Recovery of the case.) 7. A common and overlooked cause of Backache and Sciatica. (Sacro-iliac strain.) 8. Rectal injections of Musk, for Obstinate Hiccoughs. 9. A neglected Principle of Diagnosis.

September

1. *Baby saving and Child Protection.* Van Baun, W. W.
2. *Causes retarding the Spread of Homœopathy.* Hawkes, W. J.
3. *A Resumé of Office Cases.* Swartz, J. R.
4. *Industrial scalping.* Northrop, H. L.
5. *Preparation and after care of surgical cases.* Ridgway, Mary D.
6. *Drainage.* Farringer, H. R.
7. *A Caseo of Hydatid Moles with Penetration of the Uterine Wall.* Caldkins, D.
8. *A Letter from England.* Bullard, J. A.

October

1. *Tuberculin in Diagnosis and Treatment.* Laidlaw, G. F.
2. *Some Thoughts upon the Laying of the Foundations of a Healthy Nervous System.* Massey, F. F.
3. *A Plea for Medical Gynecology.* Rieth, J.
4. *Differential Diagnosis of Some of the More Common Skin Diseases.* Ealee, P. H.
5. *Arterio Sclerosis.* Saul, C. D.
6. *Cardiac Asthma.* Rheinhart, S. M.
7. *Mammary Skin Lesions Complicating Pregnancy and Lactation.* Fenimore, B.
8. *How I treat a case of Pregnancy and Labor.* Thurston, L.
9. *Medical Examination and Licensure.* Maddux, D. P.

C. W.

The Homœopathic World. November

1. *Washington Epps.*—Obituary.
2. *The Advantages of Homœopathy.* Neatby, T. M.
3. *A Proving of Radium Bromide.* Dieffenbach, W.

C. W.

The British Homœopathic Journal. September

1. *Influenza.* Hawkes, A. E.
   An extensive discussion of the pathology, bacteriology and clinical pictures of the disease, illustrated by cases, and followed by a list of medicines with their keynotes. A most valuable paper by one who has given so much thought and study to influenza. Discussion by Blackley, Roche, Macnish, Goldsbrough, Bodman, Reed, Thomas, Nankivell, Hey and Alexander.
2. *Some facts about Ophidians and Antiophidic Treatment.* Vollmer, (Brazil).

October

1. *Diabetes Mellitus.* Blackley, J. G.
2. *Graphites.* Stoneham, T. G.
   Another of Dr. Stoneham's scholarly contributions to materia medica.
3. *A Case of Tabes Dorsalis, with Special Features.* Neatby, T. M.

November

1. *"Schism!"* Roche, E. B.
   A bit of homœopathic history in England told in that forcible style which Englishmen are wont to use in fighting for their rights with the true courage of their convictions. It is papers like these which make honest homœopaths hold up their heads and continue to improve Homœopathy by study,—whether it be to broaden or narrow its limitations—and

thus vindicate "the honor and good names of our departed master, fathers, and faithful companions."

2. *Nasal Catarrh in Childhood.* Green, V.
3. *Washington Epps.*—Obituary. *C. W.*

The Medical Century. November

1. *Misdirected Efforts.* Rice, P.
A strong appeal to the homœopathic school which is welcomed by those whose minds are open to reason, but which will be sniffed at by those who are entirely guided by the faith within them. The gist of the paper is in the concluding paragraph. "We can do better! We ought to do better! We must do better! But we never shall until we change our tactics, and this change must be by way of more respect for truth and less for our theories."
2. *Some Experiences with the single Remedy.* Inman, L. E.
Recoveries:—1. Enteritis—Aloes. 2. Gastro-duodenitis—Cocculus. 3. Profuse sweating—Jaborandi 6x. 4. Double Malaria—capsicum. 5. Malaria—Nat. Mur. 200x. 6. Malaria—Bry. 7. Capillary Bronchitis—cina. 8. Irregular menses—Fe. Met. 9x.
3. *The Cardio-Vascular Renal Complex.* Vessie, P. R.
"In an examination of thirty-seven cases of primary valvular lesion I found that fourteen cases, not complicated with secondary nephritis, presented a normal blood pressure; while twenty-three cases of primary valvular lesion, with a nephritis as a compensatory complication, exhibited a subnormal blood pressure."
4. *Epithelioma of the Tongue.* Guild, W. A.
5. *Necessity of Boosting Homœopathy and How to do it.* Baldwin, A. H.
"Homœopathy is as broad as the earth, as high as the heavens, and as deep as the sea, embracing all things curative." Such words will never boost homœopathy, nor will they help us in gaining the recognition in medical legislation suggested by the author. We prefer to harken to the advice of Dr. Rice.
6. *A Comparison of Gelsemium Cimicifuga and Lachnantes, Especially as related to Head Pains.* Geiser, S. R.
Lachnantes is hardly mentioned, but the differentiation of the other two remedies is valuable, although unfortunately it cannot be condensed in a review.
7. *Homœopathy and the Advance of Modern Medicine.* Runnels, S. C.
8. *Therapeutics of Pneumonia—Clinical Experiences.* Laidlaw, G. F.
9. *Homœopathy of India in Danger.* Kaistha, D. S.
There being no medical legislation in India, quackery is much in vogue. There are homœopathic night schools which create ignorant homœopathic practitioners who know nothing of the fundamental branches of medicine. Certain Chicago schools are notorious for conferring the degree of M.D. on laymen in India. This has led to a serious state of affairs which puts homœopathy in disgrace in India.
10. *Legislative History—Hints.* Reilly, W. E.

Journal Belge d'Homœopathie. September—October

Quinine and Intermittent Fever. Kruger.
The author agrees with Castellan that the mosquito theory is far fetched. He attributes the introduction of arsenic into the old school to a homœopath. In this he does injustice to Fowler, who introduced his Fowler's Solution in 1786 as a remedy of equal curative powers to cinchona in the treatment of malaria. The author takes up the homœopathicity of quinine to malaria and brings out its indications according to Allen.

North American Journal of Homœopathy. October

1. *Feeding at the Breast.* Green, C. R.
The author has made a careful study of his subject, which he presents clearly and forcibly. He not only gives us his own ideas but those of

many careful observers. Contra indications, 1. Tuberculosis. 2. Grave systemic diseases, such as advanced disease of the heart, liver, or kidneys, cancer, and diabetes. 3. Acute communicable diseases, such as diphtheria, typhoid, pneumonia, scarlet fever, erysipelas, and acute rheumatism. 4. Severe nervous diseases, such as chorea, hysteria, or epilepsy. 5. Diseases of the breasts. 6. Absolute lack of milk secretion. The importance to mother and infant of breast feeding. Constipation in breast-fed babies best treated by feeding the mother on laxative foods.

2. *Treatment of Typhoid and Paratyphoid.* Butler, Alice.
   See our gentle remarks on this paper in a review of The Clinique for September in New England Medical Gazette, October, 1912.
3. *Stereoscopic Skin Clinic.* Bernstein, R.
4. *The Crime against Physical Therapeutics.* Grubbe, E. H.
5. *Epithelioma of the Tongue.* Guild, W. A.
6. *Acute and Chronic Gastric Indigestion.* Burt, C. E.
   With the author's usual bibliography of 5 text books.
7. *Preparatory and Post Operative Treatment of Carcinoma.* Guild, W. A.

November

1. *Clarifying Urine for the Albumin Test.* Laidlaw, G. F.
2. *Some Medical Problems, and How shall we meet them?* Kinney, C. S.
   Masturbation a symptom of degeneracy rather than a cause of insanity. The importance of clergymen requiring a clean bill of health from couples who desire the matrimonial bond. The justification of vasectomy in the habitual criminal. Criminal abortion.
3. *Glancoma—Its Cause and Cure Demonstrated in the Laboratory.* Stewart, T. M.
   A consideration of the work of Prof. H. Fischer. The cause of glancoma resides in the tissues of the eye, which are dependent on the general state of the system. Under certain osmotic conditions the colloids absorb an increased amount of water. To offset this a chemically pure sodium citrate sol. 4.05-5.41 per cent is used for sub-conjunctival injection.
4. *A Review of the Question of Belladonna as a Prophylactic in Scarlet-Fever.* Wesselhoeft, C.
5. *Urticaria.* Gramm, E. M.
   The most common cause is a gastro-intestinal insult acting in some way by anaphylaxis.
6. *Sketch of Aurum Metalliciun.* del Mas, R.
7. *Why, from the Standpoint of a Materia Medicist, We should have a separate Organization.* Eustis, J. B. G.

Rebman & Co., of New York, have just issued their new catalogue of medical publications. It shows an unusually attractive list of medical works. This Company makes a specialty of reproducing in English, foreign medical works,—thus giving the American physician the very best publications of other countries, especially those from Germany and Austria.

The catalogue will be mailed free to any physician or medical student applying for it.

PERSONAL AND GENERAL ITEMS.

Dr. Stuart Close of Brooklyn, N. Y., Professor of Homœopathic Philosophy in New York Homœopathic Medical College, delivered two lectures in a course of four on "The Essentials of Homœopathic Practice," to the students of Boston University School of Medicine, December 13 and 14. The remaining lectures in the course are to be given in January (dates not yet set), and the profession at large is invited to attend. Dr. Close treats the subject in a broad and scholarly way.

Dr. Edward S. Calderwood has removed from 244 to 223 Warren Street, Roxbury.

Drs. Ward I. and Lydia Baker Pierce (B. U. S. M.) have removed from 2053 Murray Avenue to 5661 Beacon St., Pittsburgh, Pa.

Dr. Alice French Mills (B. U. S. M. 1880) has removed from Binghamton, New York, to 50 Fairview Avenue, Newton, New Jersey.

Dr. Harriet Horner has removed from Newton, Mass., and is now assistant in Westborough State Hospital.

Dr. Lillian Moore-Lawford, class of 1911 B. U. S. M., has sailed with her husband for the mission field in India.

Clinics at University of Michigan.—The Clinical Faculty of the Homœopathic Medical College of the University of Michigan, Ann Arbor, will give a series of public clinics during the entire week of January 6, 1913, to which all members of the profession are invited. Doctors Stephen H. Knight and Rollin H. Stephens, both of Detroit, will coöperate with the Faculty of the College in their respective specialties. The clinics will be mostly operative, in the various departments of surgery. There will, however, be at least one medical and one nervous disease clinic and, perhaps, a few special lectures.

A special announcement is being prepared, giving hours and names. The announcement will be sent upon application to the Dean of the College.

Public Addresses by Boston Physicians.—A movement has been initiated by the American Medical Association to provide, during the coming winter, a series of addresses on topics of hygiene before "public meetings, in schools, women's clubs, teachers' institutes, and other gatherings." For this purpose, "a speakers' bureau has been established in Chicago," and arrangements have been made with physicians of distinction in the various sections and communities of the country to deliver the addresses. The Boston physicians who will take part in this project are Dr. Horace D. Arnold, Dr. Richard C. Cabot, Dr. William T. Councilman, Dr. Thomas F. Harrington, Dr. John L. Morse, and Dr. Mark W. Richardson.—*Boston Medical and Surgical Journal.*

Affiliation of Hospital with Medical School

The announcement has recently been made of an affiliation between the New York Hospital and the Medical Department of Cornell University in New York City. The terms of the copartnership are that in consideration of a substantial fund donated to the hospital to aid its future building projects, the institution gives to the medical college for purposes of teaching and research, one-half of its entire service, comprising medical, surgical and children's wards, in all about 150 beds. The exact amount of the gift has not been made public, but the donor, Mr. George F. Baker, is a member of the board of governors of the New York Hospital and is said to be deeply interested in medical education. He thus evinces his conviction that the greatest efficiency for both hospital and medical school is to be attained through coalition. This coalition is fully in accord with the principles long advocated by the Council on Medical Education of the American Medical Association. Already throughout the country fully a dozen coalitions between university medical schools and neighboring hospitals have been brought about. Each coalition strengthens the cause of higher medical education by increasing the opportunities of colleges in both undergraduate and graduate instruction, and by supplying them with the definite field for advanced research without which such work must always be restricted. The further announcement is made of the gift to the medical college by another philanthropist of a $1,000 annual fellowship in medicine to be allotted for work in the New York Hospital medical wards. The college, besides large building properties and equipment, now possesses an endowment for maintenance of $4,000,000, which places it among the highest-endowed medical schools in the country.

—*Journal Amer. Medical Ass'n.*

THE

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A Monthly Journal of Homœopathic Medicine

Editors
JOHN P. SUTHERLAND, M.D.
ARTHUR H. RING, M.D.
W. H. WATTERS, M.D.

"Die Milde Macht Ist Gross"

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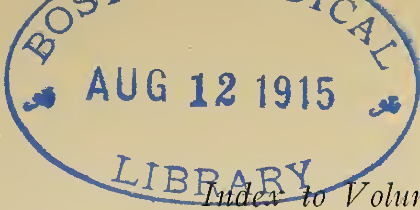
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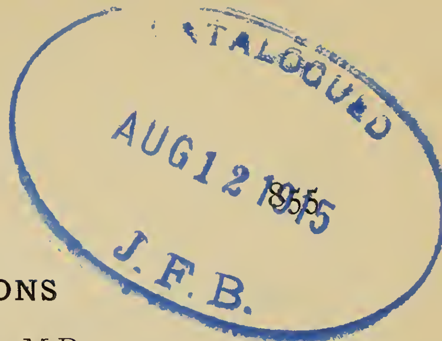
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AUG 12 1915
J. F. B.

ORIGINAL COMMUNICATIONS

Acute Pneumonic Fever. By Wm. H. Van Den Burg, M.D. 412
Acute Poliomyelitis. By Henry F. Schantz, M.D. 774
Adams, George Smith 467
Adams, George S., M.D. Psychoanalysis 803
Address of Chairman of the Bureau of Materia Medica and General Therapeutics, Pittsburgh. Meeting of the American Institute of Homœopathy. By J. Herbert Moore, M.D. 688
Address to the 1912 Graduating Class of Boston University School of Medicine. By Nelson M. Wood, M.D. 427
Alzheimer's Disease (Senium Præcox): The Report of a Case and Review of Published Cases. By Solomon C. Fuller, M.D. .. 635
Ameer, Hafiz. Uncinariasis 230
Application of Bacterial Vaccines to Surgical Work, The. By George R. Southwick, M.D. 9
Attitude of the Average Physician Towards Vaccine Therapy and Its Real Value in Medicine, The. By H. W. Nowell, M. D. 17

Backaches, Commonly Diagnosed "Rheumatic." By A. G. Howard, M.D. 189
Basic Principles of Vaccine Therapy, The. By R. R. Mellon, M.D., B.S. 751
Batchelder, Frederick P., M.D. Vaccines in General Practice .. 5
Bennett, John Hillman, M.D. Some Modes of Tubercular Infection Amongst Textile Workers 782
Blodgett, S. H., M.D. Urinary Indications of Threatened Eclampsia 370
Brain Weights in Psychoses. By Stella B. Shute, A.B.. 605
Briggs, J. Emmons, M.D. Remarks on Skin Grafting 72
Brown, L. A., M.D. High Frequency Currents in General Practice 362
Brownell, Gladys Howard. Vaccines and Their Place in Medicine 240
Burlingame, Clarence G., M.D. A Report on the Therapeutic Use of Bacterial Vaccines and on Anti-Typhoid Vaccination at Westborough State Hospital 611

Cancer Research. By H. W. Nowell, M.D. 300
Case Illustrating Homœopathic Prescribing, A. By W. A. Dewey, M.D. 87
Case of Huntingdon's Chorea with Late Onset, A. By Solomon C. Fuller, M.D., and John F. Lovell, M.D. 679
Case of Mongolian Idiocy, A. By Walter A. Jillson, M.D. 631
Case of Multiple Papilloma of the Brain (Adeno-Carcinoma), A. By Solomon C. Fuller, M.D. 621
Coates, Everett W. Diet in Glycosuria 256
Coles, William W., M.D. Recoveries in Dementia Præcox 537
Coles, William W., M.D. Sleep and Somnambulism 589
Composite Physician, The. By James C. Wood, M.D. 405
Considerations of Pain in Diseases of Stomach, Billiary Tract and Appendix. By Charles T. Howard, M.D. 815
Constipation. By Frederick W. Halsey, M.D. 169
Corner-Stone of Homœopathy, The. By Frank W. Patch, M.D. .. 724
Crane, Clarence, M.D. The Treatment of Dysmenorrhea by Uterine Dilation 137

Dedication Exercises of the Evans Memorial Building 113
Description of the Evans Memorial Building 127
Dewey, W. A., M.D. A Case Illustrating Homœopathic Prescribing .. 87
Diagnosis as Related to the Selection of the Indicated Remedy and the Method of Its Selection. By George Royal, M.D. 696
Diet and Feeding in Peptic Ulcer. By Frederick B. Percy, M.D. .. 808
Diet in Glycosuria. By Everett W. Coates 256

Efficient Nurse, The. By Frank W. Patch, M.D. 777

Foot and Knee Strain. By Howard Moore, M.D. 202
Foreword. A Symposium of Homœopathy 687
Fuller, Solomon C., M.D. A Case of Huntingdon's Chorea with Late Onset 679
Fuller, Solomon C., M.D. A Case of Multiple Papilloma of the Brain (Adeno-Carcinoma) 621
Fuller. Solomon C., M.D. Alzheimer's Disease (Senium Præcox): The Report of a Case and Review of Published Cases 635
Fuller, Solomon C., M.D. A Study of the Miliary Plaques Found in Brains of the Aged 479
Fuller, Solomon C., M.D. Further Observations on Alzheimer's Disease 669
Fuller, Solomon C., M.D., joint author. Purulent Streptococcic Cerebro-Spinal Meningitis from Middle Ear Disease: The Report of a Case 597
Further Observations on Alzheimer's Disease. By Solomon C. Fuller, M.D., and Henry I. Klopp, M.D. 669
Future of Homœopathy, The. By Frank C. Walker, M.D. 83

Gamble, Eleanor A. McC., Ph.D. The Selection of Stimulus Words for Experiments in Chance Word Reaction 551
Guibord, Alberta S., M.D., joint author. The Selection of Stimulus Words for Experiments in Chance Word Reaction 551

Hahnemann, the Leader of a Great Reformation. By J. H. McClelland, M.D. 691
Halsey, Frederick W., M.D. Constipation 169
Hay Fever. By George B. Rice, M.D. 349, 421
Henkin, Charles L. Prophylaxis: Its Importance 244
High Frequency Currents in General Practice. By L. A. Brown, M.D. 362
Homœopathy and Surgery. By Chas. E. Walton, M.D. 702
Homœopathy and the Advance of Modern Medicine. By Scott C. Runnels, M.D. 352
Homœopathy of Tomorrow, The. By O. S. Runnells, M.D. 709
Howard, A. G., M.D. Backaches, Commonly Diagnosed "Rheumatic" 189
Howard, Charles T., M.D. Considerations of Pain in Diseases of Stomach, Biliary Tract and Appendix 815

Jillson, Walter A., M.D. A Case of Mongolian Idiocy 631
Jordan, E. M., M.D. Some Facts Concerning Syphilis of the Central Nervous System 1
Jordan, Michael M., M.D., joint author. Two Cases of Multiple Sclerosis with Obscure Neurological and Mental Symptoms (Formes Frustes) 571

Klopp, Henry I., M.D., joint author. Further Observations on Alzheimer's Disease 669
Klopp, Henry I., M.D., joint author. Two Cases of Multiple Sclerosis with obscure Neurological and Mental Symptoms (Formes Frustes) 571
Klopp, Henry I., M.D. The Psychopathic Division Westborough State Hospital 471

Laidlaw, George F., M.D. The Value of Homœopathy to the Internist 705
Lane, Elwin D., Ph.B. Vaccination 431
Lee, Harry J., M.D. A Statistical Consideration of Hospitals Located in Boston 139
Lovell, John F., M.D., joint author. A Case of Huntingdon's Chorea with Late Onset 679

McClelland, J. H., M.D. Hahnemann, the Leader of a Great Reformation 691
Mellon, R. R., M.D., B.S. The Basic Principles of Vaccine Therapy 751
Milk Question as It Relates to the Physician, The. By Charles L. Nichols, M.D. 63
Moore, J. Herbert, M.D. Address of Chairman of the Bureau of Materia Medica and General Therapeutics, Pittsburgh. Meeting of the American Institute of Homœpathy 688
Moore, Howard, M.D. Foot and Knee Strain 202
Myocarditis. By A. B. Schneider, M.D. 771

Negative Conditions of Alimentary Tract. By Frank W. Patch, M.D. 823
New Departure in Clinical Teaching, A. By Frederick B. Percy, M.D. 229
Nichols, Charles L., M.D. The Milk Question as It Relates to the Physician 63
Nowell, H. W., M.D. Cancer Research. 300
Nowell, H. W., M.D. The Attitude of the Average Physician Towards Vaccine Therapy and Its Real Value in Medicine 17

Organization as a Factor in Medical Efficiency. By Frank W. Patch, M.D. 356

Patch, Frank W., M.D. Negative Conditions of Alimentary Tract 823
Patch, Frank W., M.D. Organization as a Factor in Medical Efficiency 356
Patch, Frank W., M.D. The Corner-Stone of Homœopathy 724
Patch, Frank W., M.D. The Efficient Nurse 777
Percy, Frederick B., M.D. Diet and Feeding in Peptic Ulcer 807
Percy, Frederick B., M.D. A New Departure in Clinical Teaching 229
Periodic Vomiting. By Walter Wesselhoeft, M.D. 57
Plans and Purposes of the Evans Memorial Building 132
Present Status of the Use of Drugs in Treating Disease, The. By Samuel H. Spalding, M.D. 135
Prophylaxis: Its Importance. By Charles L. Henkin 244
Psychoanalysis. By George S. Adams, M.D. 803
Psychopathic Division Westborough State Hospital, The. By Henry I. Klopp, M.D. 471
Purulent Streptoccic Cerebro-Spinal Meningitis from Middle Ear Disease: The Report of a Case. By Ruth B. Coles, M.D., and Solomon C. Fuller, M.D. 597

Radium: A Personal Experience. By Henry Edward Spalding, M.D. 373
Rand, John Prentiss, M.D. The Theory of Dynamization! Is it Scientifically Tenable? 715
Recoveries in Dementia Præcox. By William W. Coles, M.D. .. 537
Remarks on Skin Grafting. By J. Emmons Briggs, M.D. 72
Report on the Therapeutic Use of Bacterial Vaccines and on Anti-Typhoid Vaccination at Westborough State Hospital, A. By Clarence G. Burlingame, M.D. 611
Rice, George B., M.D. Hay Fever 349, 421
Rockwell, J. Arnold, Jr., M.D. Unusual Case of Typhoid Fever .. 81
Royal, George, M.D. Diagnosis as Related to the Selection of the Indicated Remedy and the Method of Its Selection 696
Rules to be Observed by the Patient in the Proper Treatment of Constipation. By Benj. C. Woodbury, Jr., M.D. 143
Runnells, O. S., M.D. The Homœopathy of To-morrow 709
Runnells, Scott C., M.D. Homœopathy and the Advance of Modern Medicine 352

Sanders, Orren B., M.D. Vulvovaginitis in Children 307
Schantz, Henry F., M.D. Acute Poliomyelitis 774
Schneider, A. B., M.D. Myocarditis 771

Selection of Stimulus Words for Experiments in Chance Word Reaction, The. By Eleanor A. McC. Gamble, Ph.D., and Alberta S. Guibord, M.D. 551
Shute, Stella B., A.B. Brain Weights in Psychoses 605
Sleep and Somnambulism. By William W. Coles, M.D. 589
Smith, Edwin W., M.D. The Treatment of Eclampsia 289
Some Facts Concerning Syphilis of the Central Nervous System. By E. M. Jordan, M.D. 1
Some Modes of Tubercular Infection Amongst Textile Workers. By John Hillman Bennett, M.D. 782
Southwick, George R., M.D. The Application of Bacterial Vaccines to Surgical Work 9
Spalding, Henry Edward, M.D. Radium: A Personal Experience .. 373
Spalding, Samuel H., M.D. Present Status of the Use of Drugs in Treating Disease 135
Statistical Consideration of Hospitals Located in Boston, A. By Harry J. Lee, M.D. 139
Steele, Albert E., M.D. Vaccine Work at the Massachusetts General Hospital 26
Study of the Miliary Plaques Found in Brains of the Aged, A. By Solomon C. Fuller, M.D. 479

Theory of Colds, A. By B. C. Woodbury, Jr., M.D. 76
Theory of Dynamization, The. Is it Scientifically Tenable? By John Prentiss Rand, M.D. 715
Treatment of Dysmenorrhea by Uterine Dilation, The. By Clarence Crane, M.D. 137
Treatment of Eclampsia, The. By Edwin W. Smith, M.D. 289
Two Cases of Multiple Sclerosis with Obscure Neurological and Mental Symptoms (Formes Frustes). By Solomon C. Fuller, M.D., Henry I. Klopp, M.D., and Michael M. Jordan, M.D. .. 571

Ulrich, Helmuth, M.D. What a Study of Recent Literature upon Salvarsan and Neo-Salvarsan Teaches Us 763
Uncinariasis. By Hafiz Ameer 230
Unusual Case of Typhoid Fever. By J. Arnold Rockwell, Jr., M.D. .. 81
Urinary Indications of Threatened Eclampsia. By S. H. Blodgett, M.D. 370
Uses and Limitations of Blood Examinations. By W. Henry Wilson, M.D. 760

Vaccination. By Elwin D. Lane, Ph.B. 431
Vaccine Work at the Massachusetts General Hospital. By Albert E. Steele, M.D. 26
Vaccines and Their Place in Medicine. By Gladys Howard Brownell 240
Vaccines at the Massachusetts Homœopathic Hospital. By W. H. Watters, M.D. 13
Vaccines in General Practice. By Frederick P. Batchelder, M.D. 5
Value of Homœopathy to the Internist, The. By George F. Laidlaw, M.D. 705
Van Den Burg, Wm. H., M.D. Acute Pneumonic Fever 412
Vulvovaginitis in Children. By Orren B. Sanders, M.D. 307

Walker, Frank C., M.D. The Future of Homœopathy 83
Walton, Chas. E., M.D. Homœopathy and Surgery 702
Watters, W. H., M.D. Vaccines at the Massachusetts Homœopathic Hospital 13
Wesselhoeft, Walter, M.D. Periodic Vomiting 57
What a Study of Recent Literature upon Salvarsan and Neo-Salvarsan Teaches Us. By Helmuth Ulrich, M.D. 763
Wilson, W. Henry, M.D. Uses and Limitations of Blood Examinations 760

Wood, James C., M.D. The Composite Physician 405
Wood, Nelson M., M.D. Address to the 1912 Graduating Class of Boston University School of Medicine 427
Woodbury, B. C., Jr., M.D. A Theory of Colds 76
Woodbury, Benj. C., Jr., M.D. Rules to be Observed by the Patient in the Proper Treatment of Constipation 143

CLINICAL DEPARTMENT

Clinical Department .. 28, 90, 148, 210, 267, 325, 376, 442, 736, 787, 828

EDITORIAL

Addition to Editorial Staff .. 31
Alien Maniacs .. 791
An Appreciation .. 791
Boston University and the New York Regents .. 831
Capital Punishment .. 329
Climacteric of the Gazette, The .. 275
Close Second, A .. 157
Comparisons Are Odious .. 156
Dr. Watters Retires as Editor of the Gazette .. 274
Family Doctor, The .. 218
Iodine in Medicine .. 379
Legacy of a Leg, The .. 220
Little Missionary Work, A .. 156
Little Nearer Spotless Town, A .. 332
Lives of Great Men, The .. 34
Maurice H. Richardson .. 739
Medical Retrogression .. 35
Meningeal Lacerations of the New Born .. 450
Noiseless City, The .. 31
Now for the American Institute .. 332
Physical Awakening of the Boy, The .. 381
Physical Disability a Matter of Community Interest .. 832
Pittsburgh Session of the American Institute of Homœopathy, The 384
Prevention that Prevents .. 105
Public Health and the Party Platform .. 740
Sanity and Safety of the "Fourth" .. 380
"Sick-a-bed Lady, The" .. 104
Something to Quiet the Nerves .. 103
Sterilizing the Criminal and Defective .. 331
Stick to the Indicated Remedy .. 279
Things Worth While .. 154
Working Our Over-Worked Profession .. 277
World Wide Homœopathy .. 447

OBITUARIES

Bemis, O. A., M.D. .. 37
Bryant, Virginia F., M.D. .. 38
Cross, Hiram B., M.D. .. 837
Fuller, Elmer E., M.D. .. 288
Hallowell, Henry C., M.D. .. 288
Hill, Almon W., M.D. .. 38
Kempton, Amanda H., M.D. .. 164
Luscombe, J. E. .. 839
Maxwell, George B., M.D. .. 288
McClelland, John Black, M.D. .. 794
Packer, Edmund H., M.D. .. 839
Perkins, Henry P., M.D. .. 38
Smith, Asa D., M.D. .. 37

Spalding, Henry E., M.D. 836
Swan, Jesse J., M.D. 288
Tobey, Walter H., M.D. 838

SOCIETIES

American Surgical Association 795
American Association of Clinical Research 459
American Institute of Homœopathy 36, 158
Boston Homœopathic Medical Society 158, 338, 794, 842
Connecticut Homœopathic Medical Society 284, 340
International Hahnemannian Association 394
Massachusetts Homœopathic Medical Society 283, 338, 794, 840, 841
Massachusetts Surgical and Gynæcological Society 36, 395
New Hampshire Homœopathic Medical Society 395
New York Homœopathic Society 458
Southern Homœopathic Medical Association 459, 842
Vermont Homœopathic Medical Society 794

Personal and General Items .. 50, 106, 161, 222, 268, 343, 459, 747, 800, 852
Book Reviews 38, 159, 221, 282, 337, 394, 454, 741, 795, 843, 846
Our Reading Bureau 280, 333, 391, 452, 846

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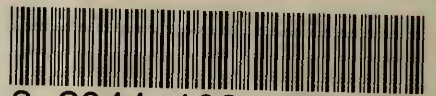
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