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OF

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तदेव युक्तं भैषज्यं यदारोग्याय कल्पते ।
सचैव भिषग् श्रेष्ठो रोगेभ्यो यः प्रमोचयेत् ॥
चरकसंहिता ।

That alone is the right medicine which can remove disease:
He alone is the true physician who can restore health.

Charaka Sanhitá.

EDITED BY

MAHENDRA LA'L SIRCA'R, C.I.E., M.D., D.L.

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WHAT IS A HOMŒOPATHIC PHYSICIAN?

IN our last number we considered it strange that at this late hour of the day a question should be asked as to what should be the true homœopathic formula, and that an august body like the American Institute of Homœopathy should have thought it necessary and fit, at its last annual meeting, to settle the question authoritatively. We plainly said that we cannot look upon the decision of the Institute as happy. And we have given our reasons for our own opinion.

At the same annual meeting of the Institute another question of much greater and graver importance was decided, and that was the question, what is a homœopathic physician? We say of greater and graver importance, because, strange as it may appear, a large number of our school in their zeal to be pure Hahnemannians, would appear to ignore tacitly if not openly the requisite preliminary qualifications of a physician, his sole function being reduced to the mechanical comparison of the symptoms of diseases with the symptoms of drugs. If it were not for the law in all civilised countries to insist upon these preliminary qualifications, the Hahnemannians would abolish anatomy and physiology from their medical institutions, and with them would go physics, chemistry, and pathology as unnecessary and useless encumbrances.

If we mistake not the pure Hahnemannians are to be found chiefly among our American confrères. And it is a matter of regret that though most of them are masters of the healing art and ornaments of the profession not only by their special knowledge of and skill in homœopathy, but by their thorough knowledge of the whole science of medicine and by their general accomplishments, they should encourage such small learning amongst members of a branch of the profession where in addition to the special knowledge of therapeutics there should be the highest knowledge of general medicine and of all science. It is a matter of regret, we repeat, that they should thus be the unconscious instruments of promoting what we cannot but characterise as charlatanry of the worst description, because it is charlatanry in homœopathy, where no such thing ought to exist.

If the evil were confined to America, we would not have troubled ourselves about it. For in America there is enough corrective for it, and at last the most efficient corrective has been applied. Our country has been seriously affected by it. India has fallen so far from its ancient purity that it has become, *par excellence*, the land of impostures and impostors, and in no walk of life has it become so as in the medical profession and especially in the homœopathic branch of it. And we have the strange spectacle of America aiding and abetting the impostors by its powerful support. Nothing is easier than for the veriest ignoramus, one who cannot make an honest living in any way, to become a homœopathic practitioner, by possessing a domestic manual and a box of medicines. And the success which such a practitioner attains in ordinary cases, especially when spoiled or given up by old school practitioners, encourages him to pursue his easy avocation with more and more persistence, and confirms him in the belief that to become a homœopathic physician one need not go through a tedious and difficult course of regular graduation in an accredited medical institution. And in course of time he thinks so highly of his powers and ablities that he finds no difference between himself and a regularly qualified physician.

We would not object if lay, unqualified practitioners were contented with vaunting their abilities before their own patients. Strangely enough they have actually begun a regular career of deceiving the public, and this we find they are doing by

two methods. One is by sending reports of their cases and even articles to foreign journals whose editors, some how being made to believe that they are qualified practitioners in this country, unhesitatingly admit those articles and cases in their journals. This fact of their appearance as contributors to respectable English and American homœopathic journals, is used as a certificate to gull their ignorant countrymen into the belief of their competency and even of their superiority over the regular practitioners. We have, whenever occasion presented, sounded the note of warning to our brother editors against admission into their journals contributions from such sources. But somehow the note does not seem to fall on the ears for which it is intended.*

While we write we find a paper by one of these Indian

* Speaking of unqualified practitioners of homœopathy in the History of Homœopathy in India that we had to write for the last International Homœopathic Congress held in London, in August 1896, we said :

"As pioneers of homœopathy, as assistants and attendants, these practitioners have their use, and their services are often invaluable. But with very few honorable exceptions they do not keep to their level ; in proportion to their lack of knowledge they unwarrantably encroach upon the province of the legitimate practitioner ; and very often by their vauntings and pretensions they bring unmerited reproach upon homœopathy. It is a matter of very great regret and of no small surprize to us that cases and provings from these men, who do not scruple to pirate the title of "Dr.", are so readily accepted and published by first-class journals in England and America. I wish this were all. America is lending her aid in multiplying our irregular practitioners in a still more potent way, and that is by some of her homœopathic colleges conferring their honorary degrees of Doctor of Medicine on persons who have not the slightest pretension to medical education. All this is no doubt done from ignorance of the qualifications of these men, but the mischief done is incalculable and irremediable. The audacity and vanity of these men are heightened beyond measure by the fact of their names appearing in respectable European and American journals as authors of cases and provings, and still more by the fact of being veritable M. D. s ; and thus they are enabled to impose upon their credulous countrymen with greater ease and success.

"I would implore my colleagues of England and America to be very careful as to how they deal with any communications they receive from India in the name of homœopathy. They should thoroughly satisfy themselves of the reliability of the sources of such communications before they deem them worthy of the distinguished recognition which has been so often undeserved. And then the recurrence of the unpleasant matters, about which I have deemed it my duty to write so plainly, may be prevented, and homœopathy in India may be saved the disgrace that would otherwise be its inevitable lot."

Dr. Hughes (Permanent Secretary) thought fit to make the following remarks upon the above : "The most noticeable feature there (in India) was the spread of homœopathy among the native population ministered to by native amateur

homœopathic worthies prominently published in the December number of a highly respectable *American Journal of Homœopathy*, as a paper "written especially" for that Journal. This worthy has been styling himself "Dr." in anticipation, we are told, of an honorary degree which he expects for a consideration from some American Homœopathic Institution of which we have not been able to ascertain the name. Is it he who has written piteously to a friend to help him with some money in order to meet the demand for the promised degree, as unless he can send the balance due he fears the degree would be cancelled? Is it he who is enriching English and American journals with his priceless contributions and who, if we mistake not, often expresses his sorrow and surprise that he is not taken notice of in his own country while he is being so highly honored in foreign countries? We would only exclaim, verily, the prophet is honored except in his own country. We are tempted to ask our brother editors of America and England, is the dearth of matter so great for their journals that they so eagerly admit into their pages contributions without inquiring into the reliablity of the sources whence they come? What guarantee is there that the cases reported are genuine? Our colleagues ought to know that India has become a great manufacturing country for homœopathic cases.

The second method is more audacious still. It is the actual procuring of the highest medical degree, the degree of doctor of medicine, which a university or a college can bestow, from some of the American universities and colleges. We have not been able to ascertain how this feat is achieved. We are told, but we cannot persuade ourselves to believe it, that this is effected through the agency of the almighty dollar. Only in one instance were we consulted as to the qualification of a particular candidate, and after inquiry we had to report he had none so far as medicine goes, with the result that the much coveted honor was not conferred upon the aspirant after medical fame who could not produce more substantial proof of his medical qualifica-

doctors. They were not qualified, but they picked up enough instruction to enable them to act as Lady-Bountifuls and parsons often did in other countries. Homœopathists must wink at this, and not be too severe upon it. It was not strictly medical practice, but it did a great deal of good, and they might rejoice that their method was thus spreading even though in an imperfect way." Dr. Hughes, through over-zeal, certainly did miss the point I raised.

tions than his own boastings. As far as we have been able to ascertain, we do not think that similar inquiries have been made regarding the others to whom the degree has been granted. Do our American confrères think for a moment that by thus encouraging incompetency and charlatanry in homœopathy they are digging its grave in India?

We find that quite recently a third method has come into existence, and that is the actual editing of homœopathic journals, notwithstanding that two journals conducted by qualified medical men already exist. We would not object if it were a question of simple proprietorship, but when it becomes a question of editorship, and when the learned editors, passing off as homœopathic physicians, publish cases and articles in their own names, we cannot but deem it a dereliction of duty to truth and homœopathy, to take no notice of such a remarkable event which can only happen in India.

We hope that now that our American colleagues have deemed it necessary to give a formal definition of a homœopathic physician, including in that definition the highest attainments in medicine in all its branches, they will be careful that in future no one, who has not gone through a regular course of medical studies, will receive from them any encouragement in any way to deceive themselves and others as regards their true qualifications.

The American Medical Association (old school) had, by a bare majority, passed, in 1881, a resolution to the following effect: "That it is not in accordance with the interest of the public, or the honor of the profession, that any physician or medical teacher should examine or sign diplomas or certificates of proficiency for, or otherwise be especially concerned with, the graduation, of persons whom they have good reason to believe intend to support and practise any exclusive and irregular system of medicine." The object of this resolution was transparent. It was a trans-atlantic reproduction of the attitude of the British Medical Association and of the Royal College of Physicians of Edinburgh towards homœopathy in a sly disguise; and was intended as a threat against universities and colleges to grant diplomas to candidates with known homœopathic proclivities, as also to induce those candidates to give up their proclivities.

The American Institute of Homœopathy was equal to the occasion, and in the same year, at its thirty-fourth Session, under

the presidency and at the instance of Dr. J. W. Dowling, passed a resolution adopting the following definition: "A Regular Physician—a graduate of a regularly chartered college. The term also applies to a person practising the healing art in accordance with the laws of the country in which he resides." This definition is a sufficient safe-guard for homœopathic practitioners in the United States where chartered homœopathic medical colleges exist no way inferior in equipment to their sister institutions, the old school colleges, and also in other countries where after graduation in recognised old school institutions, any one may adopt homœopathy as a method of treatment applicable in a majority of cases.

But not only have duly qualified homœopathic practitioners to be safe-guarded against the intolerance of the dominant old school majority, homœopathy itself has to be safe-guarded against being abused and disgraced by men absolutely incompetent by reason of defective or no education to practise the healing art. The second part of the definition leaves a loop-hole for such abuse. The Institute was no doubt unaware that there are countries, such as ours and asiatic countries generally, where there is no law to restrict the practice of medicine to duly qualified men only, and where consequently homœopathy may be practised by any one having no medical education whatever. And it can be easily imagined what, under such circumstances, will be the fate of the system, a system which was created and developed by the greatest man that was ever born in the profession, and which can be understood and mastered only by the aid of the highest attainments, in the medical sciences. Hence the definition of a "regular physician" adopted by the Institute in 1881 does not afford the safe-guard we have thus pointed out.

We shall have to see if the definition adopted by the Institute at its last annual meeting, in June, 1899, at the instance of its Secretary, Dr. Eugene H. Porter, the accomplished editor of the *North American Journal of Homœopathy*, answers the purpose. It is as follows: "A homœopathic physician is one who adds to his knowledge of medicine a special knowledge of Homœopathic therapeutics. All that pertains to the great field of medical learning is his by tradition, by inheritance, by right."

Such a definition, Dr. Porter tells us, "seemed to be demanded," because the allopathic branch of the profession had arbitrarily and arrogantly monopolized the epithet "regular" to itself and created the false idea that a homœopathic physician was one whose medical education could be but a thing of shreds and patches, and whose claim as a member of the regular profession could not be recognized. Dr. Porter rightly says that "aided by some preposterous members of our own school," the old school would limit us to the definition that "a homœopathic physician is one who practises homœopathically," and having confined us to this definition literally construed they would "deny not only our knowledge of general medicine, but our right to employ any resources to be found there. In other words, a homœopathic physician must always prescribe Homœopathically in every case and never do anything else. If he should, he would be either a knave or a charlatan." There can be no doubt "that this systematic misrepresentation has seriously injured the standing and influence of the homœopathic school," and though there is no doubt also that "the erroneous impressions created are rapidly dying out and no labored argument is necessary to demonstrate their falsity," Dr. Porter justly thinks, "it is high time that we ourselves authoritatively define a homœopathic physician and fix as far as may be wise, his powers, his duties and his responsibilities."

Now let us see what the definition yields when subjected to a critical analysis. It consists of two parts. The first part is the definition proper, and is authoritative. "A homœopathic physician is one who *adds* to his knowledge of medicine a special knowledge of homœopathic therapeutics." The right interpretation of this definition depends upon what we should understand by "knowledge of medicine." Is it something different or apart from homœopathy? Can one be a physician who is unacquainted with homœopathic therapeutics? Medicine is a comprehensive term and includes the whole science and art of healing, and necessarily presupposes a knowledge, not superficial but intimate and deep, of the structure and functions, that is, of the anatomy and physiology, of the body whose disorders or ailments it is "the high and only mission" of the physician to remove or relieve. It would be superfluous to point out that an intimate knowledge of anatomy and physiology is only possible for one who is thoroughly acquainted with physics and chemistry in all their branches. This shows what amount of general scientific knowledge is necessary to qualify one to be a physician. Dr. Stuart Close has, therefore, very properly said: "It is implied in the definition under consideration that the Homœopathic physician is one who is thoroughly

versed in the collateral sciences of anatomy, physiology, pathology, histology, and chemistry; that the general history, principles and practice of medicine and surgery are also familiar to him; and that these collectively form the basis of his special practical education."

A knowledge of anatomy and physiology will enable a man to understand and recognize (*i. e.* to diagnose) deviations from healthy structure and function of one or more parts of the human organism. But this alone will not help him to rectify those deviations. He must be able to find out their causes, and he must have knowledge of the means and agencies by which those deviations may be rectified. The progress of knowledge has shown that all the factors in our environment or surroundings have influence beneficial or injurious on the health of all living creature, and may be made the means or agencies, by which the process of recovery from diseased conditions may be brought about. In popular estimation and still in the estimation of scientific physicians, drugs form the largest and most essential part of these agencies, and hence they are looked upon as medicines proper.

How vast and intricate the field of etiology is will be understood from the fact that the causes of most diseases and even of those of common occurrence and of the most destructive character have not yet been determined, and that a whole science, that of bacteriology, has been created and is growing up to throw light on the subject. And how difficult though apparently simple the knowledge of drugs is, may be seen from the fact that the professional mind is still divided as to the way by which that knowledge may be best attained, and as to the method according to which that knowledge may be best applied. It is this difference on which the solidarity of the profession has been wrecked, and we have the spectacle of men, whose sacred office it is to heal the diseases of mankind, in battle array against each other on points on which they of all men should have agreed to differ and shown the highest charity.

However sad, the profession, though with everything common but drug therapeutics, remains divided into two hostile branches, the majority clinging to empiricism, vague and uncertain empiricism, for their knowledge of drugs, and refusing to test the law of healing by drugs discovered by Hahnemann, and going so far as to violently refuse all fellowship with the minority who, having tested and found the law to be applicable whenever drugs are available whose symptoms elicited by provings on healthy human subjects correspond to those of diseases under treatment, adopt it in their practice. The minority being very small in all countries but the United States, all official posi-

tions, and consequently all the teaching institutions, are in the hands of the majority. It is only in the United States, of all the world, that there are regularly chartered colleges for teaching the doctrines of the minority. In the colleges of the majority or as they must be called the old school, every thing is taught that pertains to the great field of medicine with the exception of the drug therapeutics as developed by the minority. In the colleges of the minority or of the new school everything that is taught in the former is taught, and in addition their own drug therapeutics. Hence in the United States the graduates of homœopathic colleges are qualified homœopathic physicians after their successful college career; whereas the graduates of the old school colleges, whether in the United States or elsewhere, have to become homœopathic physicians by adding to the knowledge they have already acquired a special knowledge of homœopathic therapeutics.

The old school arrogates to itself the title of regular. In view of the fact that homœopathy as a method of drug therapeutics has been in existence for a century and, having commanded the recognition of some of the master minds of the profession, has grown into very nearly a mature system with fully-equipped institutions for imparting instruction in the whole field of medicine including its latest development, can that arrogant assumption any longer be maintained or allowed? Ought not every civilised government to see that the term regular physician should only be applied to the man who has been trained and educated in all the past of medicine so far as not absolutely proved false, and in all its present so far as established? If this is done, as one day it will be done, then none but qualified homœopathic physicians will be able to claim the title of regular or true physician. As has been well said by Dr. Close: "The education of a physician is not complete until he has added to these fundamental branches (anatomy, physiology, &c.) a special knowledge of the principles and practice of Homœopathy."

If what we have advanced be true then medicine can no longer be dissociated from homœopathy, and the first part of the definition of homœopathic physician adopted by the Institute becomes logically superfluous. But the circumstances of the time have rendered it necessary that such a definition should be given. So long as the profession continues divided, the insolent claims of the dominant majority "that they alone possess any right to general medical knowledge" must be shown to be false, and the world at large should be presented with "an exact statement of our position and privileges in medical education and medical practice." And so long as unqualified men do not scruple to usurp the functions and the position of the qualified homœopathic practitioner, the full qualifications of the latter

must be set forth in order to prevent this unwarranted usurpation, and save homœopathy from disgrace and from ultimate extinction in places where such usurpation is possible and systematically allowed.

But just as it is necessary to protect the homœopathic practitioner from the intolerance and bigotry of the old school, it is no less necessary to protect him from the intolerance and bigotry of members of his own school. Homœopathy is a human thing, after all, and must necessarily have all the imperfections of things human. Though a century old it is but a baby in comparison with other sciences of the same age, and in comparison with its own requirements. Its very foundation—Provings—on which alone the law of healing can be worked, continues in the most imperfect state imaginable, both as regards the number of of drugs proved and the character of the provings themselves. Faulty as the provings of about a hundred drugs by Hahnemann and his associates were, how few are the real additions and how small the improvement that have been made since. It is true that nominally there are about four hundred drugs in the homœopathic materia medica, but besides the Hahnemannian ones how few are reliable?

That the homœopathic materia medica proper does not satisfy all the requirements of our art is strongly evidenced by the but too melancholy fact that there is so much hankering after and laudation of the so-called bio-chemic or tissue remedies and of the "new, old and forgotten remedies" by distinguished members of our own school. All scruples about the homœopathicity of these drugs vanish if they have been but recommended in triturations or potencies decimal or centesimal, that is, in forms peculiar to homœopathy. The shortcomings of the homœopathic materia medica is further shown by the greedy adoption by some of our colleagues of the dangerous and often murderous serums and anti-toxins of the old school as veritable homœopathic remedies. We do not approve of such practices, but we do not object to them when had recourse to under the dictates of conscienee. We adduce them to show that homœopathy proper, though vastly superior to the old school methods, has not yet attained the perfection it is destined to, and that therefore the homœopathic physician should be allowed the fullest liberty of judgment in the discharge of his calling.

The first part of the definition, broadly interpreted, leaves the judgment and the conscience free. And the addition of the second part removes all ambiguity. If all that pertains to the great field of medical learning is the homœopathic physician's by tradition, by inheritance, by right, he certainly has the liberty to exercise his discretion in the use of such property.

The light of homœopathy will often be a great help to him in the exercise of this discretion. Whether it will *always* help he will have to find out. For ourselves, we cannot go the length with Dr. Close when he says that "Beside Homœopathy there is no Art of Therapeutics. There is only blundering and ineffective labor, too often wholly spent in vain, or worse." That there is *often* such blundering we freely admit, but that it is *always* so, we cannot admit, for that would be condemning some of our Master's important teaching. Did Hahnemann recommend Camphor in cholera, because it was a homœopathic remedy? Did he not expressly say that "the reason he gave Camphor in large doses *is that the effect* to be produced is an Allopathic and not a Homœopathic one. A palliative action must be at once produced or the patient will die before the Homœopathic medicine has time to act."

We endorse every word that Dr. Close has said about the necessity of expertness or complete knowledge of homœopathy. We fully agree with him when he says that "until a physician has mastered all the available knowledge pertaining to the principles and practice of Homœopathy he is incompetent and stands on dangerous ground." And we decry with him with all the emphasis of strong conviction—"the evils of palliation; of alternation or mixing medicine; of the use of massive doses of crude drugs; of 'off-hand' prescribing; of quickly resorting to surgical or mechanical measures for that which can only be safely and permanently accomplished by the Homœopathic remedy in potentiated dose; of 'local treatment;' of trusting to the memory instead of written records; of hurried and superficial examinations; of 'pathological prescribing;'"—believing that "all these proceed directly from ignorance of right methods," and that "the man who does these things *systematically* has never been taught the right way." But while this is our faith and conviction we should on no account fetter the judgment of a brother practitioner, and say to him "thou shalt *never* do it."

It is true that in the majority, let us say, vast majority of cases, these practices are unnecessary and are therefore injurious, but do not cases occur in which by the experienced practitioner they may be had recourse to with beneficial results? Has not a palliative often removed the disease while assuaging its pain? We would on no account mix medicines, but has not alternation sometimes been more quickly successful than the single remedy, when the remedies alternated are supplementary? In simple cases must we always sit by the bedside of the patient consulting the materia medica and the repertories, instead of prescribing off hand? Has not the knife often expedited the cure when mere medication delays it and sometimes endangers the life of the patient? Of

course we condemn hurried and superficial examination in all cases. But has not pathological prescribing, quickly and almost off-hand differentiating between pleuritis and pneumonia, gastritis and gastrodynia, tympanites and enteritis, often been of use when mere symptomatic dilly-dallying was almost worthless?

The definition is the most welome at the present moment inasmuch as "it leaves no room for bigotry and mere partizanship in our school." It is liberal because "it does not restrict, it does not limit, nor does it dictate." It has elicited from distinguished members of our body, opinions which more or less breathe the same liberal spirit. We have already considered Dr. Close's opinion which, we have shown, without being illiberal, has some partizan or sectarian leaning. The opinion expressed by Dr. Seldon H. Talcott is one which we heartily approve: "The Law Similars is immutable, but not immeasurable. There are other laws for the controlling of other forces than those which affect by disease the human body. Hence, it is right that the Homœopathic physician should not only apply the principle of Homœopathy in the treatment of the sick, but he should also consider and apply all the means of health that may be gained by the use of air and earth, of sunshine, and of water. And he should likewise consider the effects upon the sick human being of those spiritual forces of hope, and faith, and aspiration." Some of the best cures we have effected, have been without medicine but by the simple regulation of diet.

Dr. Charles E. Walton has expressed his approval of the definition by a happy analogy. "There is as much difference," says he, "between a Homœopath and a physician as there is between a Presbyterian and a Christian. We have seen Homœopaths who were not physicians and Presbyterians who were not Christians. But a *Homœopathic* physician is a composite of all that is good in Homœopathy and all that is good in any practice of medicine. And a Presbyterian Christian is a composite of all that is good in Presbyterianism and all that is good in Christianity."

Dr. Asa S. Couch considers the definition excellent, "*First*—because Homœopathy is not and can never be reduced to a perfect science. There will always be errors in provings and misjudgments in their application—imperfect ammunition and wide markmanship; *Second*—because it has never been demonstrated that 'similia' represents the only law of cure. On the contrary, cures have and will continue to be made in other ways—hence, by law, as chance has no place in Nature; *Third*—because palliation, at times, becomes the physician's imperative duty, as in renal colic and in the last stages of cancer and consumption: *Fourth*—because a Homœopathic physician should be informed

in all systems of practice, that if there be good in them he may appropriate it for the benefit of his patients, and, if bad, expose it for the advantage of mankind; and *Fifth*—because the wider the scope of knowledge the greater a physician's influence."

Dr. Joseph P. Cobb asks, "If we are honest physicians, laboring for the welfare of humanity, is their any knowledge in the world that is not rightfully ours, provided we are capable of acquiring and using it ?" He puts the matter in its true light when he says: "The personal equation of each mind will have its legitimate latitude. The one who tells me to 'know all things' in medicine is a good adviser; the one who tells me that there are somethings in medicine which I must not know is a poor teacher, while the one who undertakes to dictate how I shall apply my knowledge does not give me the privilege which he claims for himself."

Dr. Benjamin F. Bailey, the president of the meeting at which the definition was adopted, says regarding it: "It is the strongest that could possibly be given, a strong-hold upon neutral ground, warning our own people against any satisfied narrowness, against assuming aught that savors of bigotry, and an ultimatum to those of any other school, who may lay an ultra-reasonable claim to those discoveries which can in any way supplement or aid *similia* in the practice of medicine. We were citizens of the world before we were Homœopaths, and as citizens of the world we are entitled to all the gifts of nature that are vouchsafed to an ever-increasing and needy people. The only Keeper of the Seal is that One who ordained the common laws of Nature, which his children have slowly but surely learned to read. These laws were given as a common bequest to all mankind, and he who reads one chapter and thinks he knows the whole book is to be pitied, while he who unravels a hitherto unread line and attempts to hide it from his fellow, commits a crime against God and man."

Dr. William Tod Helmuth quotes the following from his inaugural lecture before the New York Homœopathic Medical College on Jan. 7, 1890 as expressive of his opinion on the definition.

"My estimation of the true Homœopathic physician is that he is one who believes in the law of cure, *similia similibus curantur*, as applicable in the treatment of the majority of curable diseases and employs it whenever he can possibly do so, but he is also one who knows that certain diseases are incurable; that many are occasioned by mechanical causes; that others arise from chemical sources; that bacilli form the basis of many others, and who, acknowledging, that the highest aim of the physician *is the cure of the sick*, avails himself of every known means that the science of this latter end of the nineteenth century offers for this purpose,

and uses them, if in his judgment they are necessary for the welfare of his patient. Shall a man, suffering from the excruciating pain of urinary calculus, or the exhaustion of Bright's disease, or a woman dying in the agonies of advanced cancer, or sinking with the hectic and sweats of prolonged phthisis, be deprived of any or all means of palliation, because the medical attendant chances to be a Homœopathic physician? The diseases are incurable under any treatment; the finger of death is all already pointing to the inevitable beyond as if mocking the vaunted power of the medical profession, while the patient cries aloud for relief; shall the physician bend all his efforts to the relief of such suffering as these, irrespective of creed, or shall he outrage humanity and prostitute the very essence of his calling—if Homœopathic remedies fail, which they very often do in such cases—by allowing suffering to go on unchecked until death closes the scene? Yet the opponents of Homœopathy would persuade the people that because in the treatment of disease Homœopathic therapeutics are adopted that those adjuvants which belong alike to the entire medical profession cannot be tolerated in conjunction with it. This cannot be allowed. It will not do for them to endeavour to thrust us backwards into the medical darkness of half a century ago. It will not do for them to let down the veil which the science of the last few years has lifted, and to endeavour to obstruct our view of the magnificent prospect which the instruments of precision and the advancements in physical science have revealed to our eyes. It will not do for them to endeavour to persuade the public that the Homœopathist has no part or lot in the recent mighty revelations in medical science, and that his practice consists in nothing but a dogma enunciated by Hahnemann a century ago and in infinitesimal doses of drugs; that his treatment is little else than the box and book method of domestic medicine, and that the microscope, the ophthalmoscope, the laryngoscope, the electrical machine together with the revelations in chemistry, neurolgy and pathology belong only to the one school. Why, gentlemen, by our indefeasible right as physicians we claim *them all*, that is all, that is good of them."

Dr. Pemberton Dudley notices the objection that may arise in our own school as follows: "It may be said—as it has been—that the Homœopathic physician has nothing, legitimately, to do with any other method of treating diseases and injuries, and that the 'definition' allows him more latitude than he can consistently occupy. The answer to all this is, that if our definition of 'a Homœopathic physician' be correct, then no Homœopathic physician from Hahnemann down, has ever permitted himself to be so restricted; and the teachings of the 'Organon' expressly forbid such an interpretation of Hahnemann's views. Moreover,

the possession of a special knowledge of Homœopathy and an equally profound ignorance of the remainder of medical science may constitute a 'Homœopathist,' but can scarcely entitle him to be designated a 'physician'. A broad and thorough knowledge of general medicine is every whit as essential to the study and practice of Homœopathy as to the acquirement and successful use of any other specialty."

According to Dr. O. S. Runnels, "every physician should be a learned man; that he should know all that pertains to the knowledge of his profession, and that he should be fully equipped in every particular to advise the afflicted who consult him with the best interests of the patients;" and that "a Homœopathic physician is a physician who has acquired the general professional knowledge necessary in his calling, plus the special knowledge of the therapeutic law 'Similia Similibus Curentur,' and who does not fail to utilize in his service for mankind all the knowledge he has gained—proving all things, holding fast that which is good."

In *The Clinique*, for Nov. 1899, Dr. H. V. Halbert, general editor, says with reference to the definition, that it "gives us a liberty which some would deny us. It emphatically states that we may be physicians in the broadest sense of the term. It even admits that we may 'add to our knowledge' and that the adjuvants of science are to be tolerated for the salvation of the sick.... At the same time we are not obliged to suffer the degradation of being called 'renegades' and 'backsliders' by those who claim a monopoly in the interpretation of Hahnemann's teachings."

We would conclude by quoting the following extract from the opening article of this Journal in January 1868. It gives us no little pleasure to see that the sentiments we expressed when we had just become a convert to homœopathy, are the same as those which are being so eloquently and forcibly expressed by some of the most eminent authorities of our school.

"We have of course our own creed and our own opinions, but we shall not only tolerate but show due respect towards the creed and the opinions of others, whenever sincere and temperately expressed. We do not pretend to have the monopoly of wisdom and of truth. We shall not ignore facts which we cannot account for, or which clash against our pre-conceived ideas. Facts such as these will only serve to stimulate us to further and more careful inquiry, and we shall always allow them to exert upon us the wholesome influence of moderating our dogmatism.

"Thus in recognizing the law, but imperfectly expressed by the phrase, *Similia Similibus Curantur*, as the best guide-law yet discovered for the selection of remedies, we do not look upon it as the ultimatum of therapeutical science. We do not overlook the action of other laws in the process of cure.

"Nor in admitting the efficacy of extremely attenuated forms, the so-called infinitesimal doses of medicines, do we deny the efficacy of massive doses administered after a different principle, or assert that these can only be used by inflicting serious mischief upon the constitution.

"Nor, again, in giving preference to the single remedy, would we swear that an alteration, or even a mixture of medicines, has not been efficient in bringing about recovery in a given case.

"The fact is, we have seen recoveries, and most remarkable ones too, under all sorts of treatment. We make this admission after a most careful observation for a number of years, having invariably endeavoured most scrupulously to eliminate the essential from the accidental elements in the various modes of treatment. This fact, instead of shaking, has only confirmed our faith in the powers of medicines. It only shows the extent and the depth of our ignorance, points to the necessity of absolute toleration, and is but one of the ten-thousand proofs of the truth of the Shakspearian adage, 'there are more things in heaven and earth than are dreamt of in *our* philosophy.'

"As matters stand at present, practically we cannot, and we ought not to be wedded to any particular system of treatment. Even if convinced that a certain law is the absolute law of cure, still from our inability to apply it in all cases, we must not sacrifice the interests of our patients, simply because we cannot get hold of a remedy to work according to the law. It is indeed beautiful and may appear truly scientific to be able to effect cures by single medicines. But when we fail in this, when from the paucity of our provings, or from our imperfect knowledge of the Materia Medica, we are unable to hit upon the right medicine to be prescribed after the law, must we stand paralyzed, and remain idle spectators of the extinction of life, even if we knew that a certain drug or a mixture of drugs has been used in similar cases with success, simply because we happen to be unacquainted with the separate pathogenetic actions of those drugs? The physician, if he is aware of the solemn responsibility of his calling, and at the same time sensible of his imperfection in the application of what he thinks to be the absolute law of healing, is bound to avail himself of the accumulated clinical experience of the world, which is too valuable a treasure to be altogether thrown overboard. Until the time of the immortal Hahnemann, we must remember that chance, and not science, was the discoverer of the most potent drugs which we daily use, and with success. However high enthroned, therefore, on science we may be, we must not disdain to profit by whatever chance or an over-ruling providence offers to us."

EDITOR'S NOTES.

Ancient Surgical Instruments in Athens.

A remarkable collection of surgical instruments used in antiquity has just been restored to Greece through the intervention of the Greek Embassy in Berlin, and will shortly be placed in a separate department of the Central Museum of Athens. The collection comprises several hundred instruments, the uses of which are for the most part doubtful or unknown. They are made of bone, glass, bronze, and iron, and belong to various periods, and were evidently mostly intended for operative purposes. Some are similar to instruments in use at the present day; for instance, there is a uterine speculum, not essentially differing from those of modern manufacture. Besides surgical instruments there are various vessels and utensils for the preparation and administration of remedies, and many feeding cups made of glass and bronze. The collection enables the student to form a pretty clear idea of medical practice in ancient Greece.—*Brit. Med. Journ.*, December 23, 1899.

Vesical Calculus around a Catheter.

Albert (*Centralbl. f. Gynäk*, No. 46, 1899) states that a girl aged 22 gave birth to a child and suffered for long afterwards from retention of urine, so that she required catheterism. Her father, a shoemaker, was accustomed to pass the instrument. At length incontinence of urine and fœtid discharge set in, and there was much pain. Examined one year and a half after the labour, a swelling of the size of two fists was detected above the symphysis. On bimanual palpation, a calculus of the size of a hen's egg could be felt: it distinctly tailed off into the urethra. A skiagraph was then taken, the stone was clearly seen, and from it ran a S-shaped shadow, as thick as a lead pencil and evidently at least 7½ inches long. Vaginal lithotomy was performed, and the stone removed with forceps. It had formed around the end of a gum catheter nearly 1 foot in length; how the instrument had been allowed to slip in did not transpire. The incision was sutured; it healed by the first intention.—*Brit. Med. Journ.*, December 23, 1899.

Geophagia.

Baccarani (*Gazz. degli Osped.*, October 1st, 1899) records three cases of earth eating. The first was in a young man, aged 21, who from childhood had been in the habit of eating dust and earth; the second in a girl of 17, who had been in the habit of doing the same thing since birth. In each of these two cases there was an enlargement of the liver and spleen, a backward intellectual condition, diarrhœa alternating with constipation, vague abdominal pains, anæmia, etc. The third patient was a girl, aged 10, whose habit it was to eat charcoal on every possible opportunity. In this case the habit seemed inherited, as the father was a charcoal eater. The

habit is probably a cause of the dyspeptic disturbances which frequently arise, and the fact that the charcoal eater displayed many of the signs and symptoms of the earth eater seems to weaken the theory that they are due to parasites or germs taken in with the earth, as these would not be so likely to be included in charcoal dust.—*Brit. Med. Journ.*, December 23, 1899.

Aneurysm of Aorta in a Child.

B. Rogers (*Pediatrics*, viii, 158, August 15th, 1899) records the case of a girl, aged 10 years, with a good family history, very anæmic, and with a loud, rough, systolic murmur all over the cardiac area, and loudest over the pulmonary region. The heart's apex was displaced 1 inch outwards, and a distinct fremitus could be felt. The progress of the case differed from that of ulcerative endocarditis. The temperature was constantly raised, and the murmur increased in loudness. The urine was normal. The child died suddenly of cardiac failure. At the *post mortem* the pericardium was found to contain some fluid with flakes of recent lymph in it; the ventricle was greatly hypertrophied, and the aortic valves glued together with large vegetations; about half an inch above the right side of the anterior semilunar valve of the aorta was a rugged hole, the opening of a small aneurysm. The aneurysm was about the size of a cob nut, but appeared to be partially filled with clot. The other organs were healthy. The case is interesting on account of the rarity of aneurysms in children. It was not in the position of the obliterated ductus arteriosus.—*Brit. Med. Journ.*, December 23, 1899.

The Electric Current as a Cause of Fire.

That defective electric-light fittings may be a source of danger and the origin of an outbreak of fire finds illustration in a recent occurrence. A correspondent in the *Times* of Dec. 19th states that he observed one evening a smell of burning wood in his drawing-room, and shortly afterwards perceived rings of blue smoke coming through the crevices of the boards close to the hearth and beyond the edge of the carpet. On moving towards the middle of the room in order to ascertain what the matter was, his foot suddenly passed through the carpet and the floor, and flames immediately issued from the hole. Evidently the floor was ablaze, although combustion was somewhat stifled by the carpet. The fire was soon subdued without much damage being done. The result, however, might have been very different had the incident happened when everybody had retired to bed. It might have been more serious also if a lady's foot had sunk through the floor, for her dress would most likely have caught fire. The explanation of this outbreak seems to be that for some reason or other the wires became overheated or through bad insulation sparks struck across them. We should have thought that the first indication of something being wrong would have been at the lamp. Obviously, when the current takes a short cut none will reach the lamp. The laying of electric wires under the floor is to be deprecated and

we were under the impression that it was prohibited by the Board of Trade. There is no need to use special insulating material in the casing if the wires are properly covered and attached to the lamp "leads." It is always desirable that the cases containing the wires should be in view so that any untoward event would soon be noticed before there was any chance of fire spreading. Further, as soon as an electric lamp fails to burn inspection should be immediately made, as unless the fuse has been destroyed the current may be passing by short circuit elsewhere with possibly dangerous results.—*Lancet*, December 23, 1899.

The Electric Current as a Cause of Fire.

We commented upon this subject in THE LANCET of Dec. 23rd (p. 1753), since which time a great deal of correspondence has appeared in the *Times*, and we have ourselves received communications upon the subject from electrical experts. It will be remembered that the origin of the discussion was an outbreak of fire which occurred in a domestic dwelling through evident defects in the system of wiring. It would appear that considerable controversy amongst electrical engineers has been held for some years as to the best and safest means of "wiring" houses. There can be little doubt that the best method would be to enclose the "leads" in pipes and thus absolutely prevent leakage. We have received pamphlets written by Mr. F. Bathurst, A.I.E.E., in which this method is urged as economical, efficient, and safe. Common gas barrel seems suitable for the purpose, but it must be carefully lined with some insulating material. Probably this procedure would add much to the expense of installation, but in view of the increasing number of accidents it would seem that something better must be adopted than wooden cases. Besides, there is a tendency on the part of electric-supply companies to increase the voltage on the services. This fact adds a very strong argument in favour of enclosing electric wires in pipes.—*Lancet*, Jan. 13, 1900.

Chloride of Gold and Sodium as a Tonic.

Brewer and Habhegger (*Journ. of Amer. Med. Assoc.*, November 25th, 1899) have made some observations which confirm Brewer's experience that the chloride of gold and sodium had, in properly selected cases, the power of increasing the percentage of hæmoglobin and the number of red blood corpuscles, and stimulating renal elimination. He also advised its use in secondary anæmia, chronic interstitial inflammations, and syphilis in debilitated subjects. Brewer and Habhegger claim moderately good results in 4 cases of chlorosis, there being slight improvement in the blood record, and, in the only case in which the urine was examined, some increase in elimination. Seven cases of secondary anæmia, after syphilis, fever, etc., showed extraordinary results in hæmogenesis. One patient was a barman, aged 38, very anæmic, languid, and subject to diarrhœa after syphilis. He complained of neuralgia in the extremities and palpitations;

pernicious anæmia was suspected. Arsenic, iron, and cathartics proved of moderate benefit. Then he was put on chloride of gold and sodium in solution, at first in doses of 1-20th gr., the dose being increased in a fortnight to 1-10th gr. A speedy improvement in the general health and condition of the blood followed, the red cells increased five times and a-half in number, the hæmoglobin from 16 to 60 per cent., the total urinary solids and urea likewise augmented. As might be expected, the salt was of little or no benefit in cases of secondary anæmia due to chronic nephritis with advanced complications, to discharging empyema, and to chronic tuberculosis.—*Brit. Med. Journ.*, Dec. 30,'99.

Dr. Goodhart on a Weakness of the Profession.

One of the weaknesses of our profession is this, that we incline to do too much, and in so doing over-treat disease. It is our virtue rather than our fault, for if there be any vice from which as a profession we are free it is that of the mercenary spirit, and this in spite of a certain letter that appeared in the *Times* lately. But, as you all know, the public will have physic for every ailment. We are eager to cure disease as quickly as possible, and so we often come to look too anxiously upon what are hardly more than physiological deflexions. I have often thought that we might with advantage cull a leaf out of the book of clerical customs and from time to time go into "retreat" as they call it. We might then have time to pause in the treatment of detail and to take a broad survey, each of us, of the teachings of our own experience.

Do not you find, you my hearers who have come to middle age and passed it, that one of the chief pleasures of your position is that of having a firmer conviction of the self-righting power of the human body? Let it alone; give it time, rest, freedom, fresh air. It must be so. For I hear it said on all sides of the ripe and mellow go-aheads of but a few years ago, by their juniors the go-aheads of to-day, how much less active they are than they were when they began to make their names. Yes; they now wait and watch. Alert still, but with a more chastened judgment that is well worth study. And surely this tells us that their experience has taught them to take an ampler view of the buoyancy and tenacity of life; that they have seen that many of their earlier efforts were petty interferences with greater power that tends almost inexhaustibly towards health, and "trusting the larger hope" they have shed off the immaturity of meddlesomeness.—*Lancet*, Jan. 6, 1900.

Anti-Alcoholic Serum.

The Paris Academy of Medicine at its meeting of Dec. 26th listened to a very interesting paper communicated by MM. Broca, Sapelier, and Thiébaut on the discovery of a so-called anti-alcoholic serum which has already created a great deal of excitement in the daily papers and which looks rather like a trade advertisement. The three observers in question started from the principle that in alcoholic intoxication, as in morphia intoxication, there is a preliminary period which is characterised by gradual toleration of the drug and a feeling

of desire for the poison. On the other hand, it is well known that certain organic poisons, more especially those produced by microbes, form in the organism antitoxins which represent the elements of resistance which the organism offers to infection. These antitoxins injected into another organism place that organism in a state of being able to resist the corresponding poison. The observers therefore determined to make research on these principles into the action of alcohol. They produced tolerance to alcohol in the horse by giving it by the mouth and then found that the serum of this horse injected into other animals which had been made tolerant and fond of alcohol produced in the animals in question such a distaste to alcohol that they preferred to give up both eating and drinking rather than continue to take alcohol. The injection of this serum in large doses has produced neither in animals nor man any unpleasant symptoms either local or general. M. Broca and his colleagues proposed to call this substances "antiethyline." Clinical experiments made upon drunkards had given most interesting and somewhat inconceivable results. The drunkard treated with antiethyline lost all his taste for alcohol; he no longer cared for brandy, rum, or absinthe, but he preserved a liking for wine and his appetite and strength returned. Up to the present antiethyline seems powerless to make any improvement in the organic alterations produced by the action of alcohol. It is only right to say that this thirsting serum which does away with any hungering after brandy but preserves the taste for wine was received by the Academy with smiling incredulity.—*Lancet*, Jan. 6, 1900.

The Proteolytic Action of Pancreatic Juice.

The action of the pancreatic juice upon proteids is rightly regarded as associated with an alkaline medium. Thus, Halliburton in the last edition of Kirkes' Physiology, remarks that trypsin acts like pepsin but with the following amongst other differences: trypsin acts in an alkaline medium, but pepsin in an acid medium. Recent experiments, however, by Mr. B. K. Rachford, the results of which are recorded in the November number of the *Journal of Physiology*, have an interesting bearing on this statement. Mr. Rachford obtained the pancreatic juice from rabbits, and to determine its solvent power he employed purified and dried blood fibrin, weighing the fibrin before and after the action of the juice had been exercised upon it. In some preliminary experiments he found, in opposition to Messrs. Chittenden and Albro, that when fresh rabbits' bile is added to the fresh pancreatic juice of the same animal the proteolytic power of the juice acting on neutral fibrin is stimulated to a marked degree. In most of the experiments the juice was able to do one-fourth more work by reason of the presence of the bile, which is entirely in favour of the value of alkalinity in promoting the action of the pancreatic juice. The presence of bile seems to limit bacterial action or the action of organised ferments on the albuminous fermentations. But when fibrin or other proteid is ingested into the stomach it combines with a certain proportion of hydrochloric acid, and Mr. Rachford, in

endeavouring to determine the effects of the addition of hydrochloric acid outside the body, found that when fibrin was one-half saturated with hydrochloric acid (no free hydrochloric acid being present) it was as readily acted upon by pancreatic juice as is neutral fibrin. When, however, the fibrin was nine-tenths saturated with hydrocholric acid the proteolytic action of the juice was retarded, whence the conclusion may be drawn that the acidification of the proteid by the acid of the gastric juice to a certain moderate extent does not interfere with the action of the pancreatic juice, though when it is fully saturated the action is impaired. From all the evidence which Mr. Rachford has been able to obtain he has been led to believe that the conditions which prevail throughout the small intestine in carnivorous animals are everywhere favourable to the proteolytic action of pancreatic juice.—*Lancet*, Dec. 30, 1899.

A Constituent of Lyddite in Milk.

Considerable speculation has been made as to the composition of lyddite. As a matter of fact its preparation is, we believe, a Government secret, though it is generally known amongst experts on explosives that it consists largely of melted picric acid. That this is not the complete story of the composition of lyddite is, however, clear from (oddly as it may seem) some evidence given last week before the committee now making inquiry in the use of colouring matters and preservatives in food. In the course of this evidence one witness admitted that yellow colouring matters were largely purchased without the slighest discrimination for the purpose of giving a richness of appearance to milk and milk products. As a rule no question was asked as to the injurious or non-injurious character of the dye so used. One of the best colouring matters for the purpose appeared to be Martius' yellow—known also under the name of naphthol-yellow, naphthalene yellow, Manchester yellow, saffron yellow, and golden yellow. Chemically this substance is dinitro-alpha-naphthol which is prepared by a series of chemical operations from naphthalene, the substance which crystallises in gas mains. The principal chemist of the Government Laboratory assured the witness that this was an important constituent in the making of lyddite. Martius' yellow is itself slightly explosive when heated, but, of course, no alarm need be raised on this account when it becomes known that it is used in milk and milk products to impart to them a rich creamy colour. Physiological experiments, however, have shown that Martius' yellow is an extremely injurious colouring matter and should be wholly prohibited. Further, it may lead to highly injurious results by merely coming into contact with an abrasion of the skin. It would appear that the trade employing colouring matters in food are rarely acquainted with the poisonous properties that characterise many of these artificial substances, and accordingly they ask no questions upon this point. Strong tinctorial power is all they desire without any reference to the probable poisonous nature of the colouring matter. This state of things emphasises the importance of the

present Government inquiry, and we may feel sure that a very definite pronouncement on a revelation of this character will be one of the features in the conclusions of this committee's report.—*Lancet*, Dec. 30, 1899.

Dr. Farquharson on Cremation.

The lecture which Dr. Farquharson lately delivered in Aberdeen on the subject of cremation was, as might be expected, most interesting and suggestive in character. Knowing his subject thoroughly, both as a prominent member of the Cremation Society and also as having sat upon the Select Committee of the House of Commons, he was able to marshal an army of facts and figures, both as to the evils and defects of the present system of graveyard burial and as to the advantages, from a sanitary and economic point of view, of cremation which seem to have commended themselves to his audience as making a strong case in favour of cremation. Taking as examples of evils produced by the present system the case of bodies dead from small-pox and cholera, he pointed out that the microbes which were responsible for the fatal result still survived in the tissues of the dead body, and that as they were proved to languish and die in brisk air and sunshine, and to love darkness rather than light because their deeds were evil, they were placed by interment in the most favourable circumstances for transferring their unwholesome attentions to other victims. Dr. Farquharson expressed the opinion that with soil through which to disseminate and water with which to percolate, and air which scattered the microbes widely in various directions, the mysterious way in which epidemics sometimes arose was not to be wondered at. Far from it being the fact that infection fled from the body with the vital spark, bacilli ran riot within the cold inanimate frame until they got an opportunity of seeking a colonising ground elsewhere, and in the action of fire alone was there a swift, safe, and easy remedy against this subtle and widespread means of transmission of infectious disease. Dealing with the sentimental objection to cremation, Dr. Farquharson fully admitted the value as well as the charm of sentiment, which was a silver thread through the common-place fabric of many a dreary life, and invested some of our social customs with a fragrant aroma grateful to the sense if not always to the senses, but he showed that if we penetrate below the surface, we find, as Sir H. Thompson had shown, that within the body laid to its last rest, all was bustle and activity. Chemical changes were going on, microbic life was becoming fruitful and multiplying fast, and the processes of decay involved conditions of mutilation and disfigurement which would fill us with horror and disgust if we would see the changes brought about by the process of dissolution. The system of pit burials as carried on in Glasgow and other places was next described and the lecturer thought that in view of the facts disclosed under this heading, he might claim a unanimous vote in favour of cremation from the inmates of any workhouse in the kingdom. Although not having the fear of "heckling" before his eyes, Dr. Farquharson

thought well to discuss the objections to cremation, foremost among which he rightly placed, as we think, the medico-legal difficulty that murder might be encouraged by the poisoner laying the flattering unction to his soul that, if his crime was not discovered while the victim was above ground, combustion of the remains would remove the chief link in the chain of evidence against him. To this objection against the general use of cremation we have not as yet seen what appears to be a valid reply. We know, of course, that the Cremation Society requires two independent certificates from medical men which are carefully considered by its medical advisers, and in case of doubt either cremation is refused, or portions of the liver and kidneys are carefully preserved, but the mere statement of these precautions, which are at present voluntary, but which the Select Committee recommended should be made compulsory in the case of all bodies cremated, shows the force of this objection to cremation. The case made out on sanitary grounds for the cremation of bodies dying of small-pox, cholera, or the plague is overwhelming.—*Brit. Med. Journ.*, Dec. 30, 1899.

Strophanthus and Digitalis.

The following, extracted from Dr. Roland White's paper on Strophanthus read before the Homœopathic Medical Society of Pennsylvania, in Sept. 1899 and published in *The Hahnemannian Monthly*, for January 1900, will be found useful:

Compared with digitalis, we find in the effects of strophanthus some points common to both remedies, viz., they both increase the force of systole, and the primary effect to diminish the rapidity of beat with irregularity and variation of the rhythm. Strophanthus, not affecting the blood-vessels, causes but slight change in blood pressure, whereas digitalis causes increased tension and pressure of the whole arterial system, to which factor its diuretic properties are due. The gastro-intestinal disturbances are much less marked in continued exhibition of strophanthus than in digitalis. The action of strophanthus is quicker and more ephemeral than with its rival, digitalis, seeming also to have no cumulative properties.

We find the greatest sphere of clinical usefulness for strophanthus in the acute and functional disturbances of the heart, although it will prove often of great service in organic diseases. As arnica represents the panacea for bruised, tired and exhausted muscular tissue so strophanthus will soothe and quiet a congested heart which is laboring and embarrased by unusual strain put upon it; palpitation; irregularity, with pale face; anxiety and faintness in athletes and wheelmen, with dull, distressing pain in the precordial region. Violent exertion, such as mountain-climbing, running, etc., causing painful, throbbing dyspnœa, with cyanosis and anxiety. Precordial pain long after the acute symptoms have passed away, the systolic beat remaining accentuated. Certain embarrassment symptomatic of circulatory disturbances during climacteric period, with aching through hips and extensor muscles of thighs, are promptly relieved by strophanthus. We find it more commonly useful among those

active, energetic types of nervo-sanguine temperament, who have more energy and ambition than muscle, and are constantly exhausting and overtaxing the physical powers. Exaggerated cardiac action in these cases, with the concomitant train of conditions, can usually be controlled by strophanthus more kindly than by any other cardiac remedy. Dyspnœa and œdema are markedly ameliorated in chronic cardiac degeneration. The œdema of acute and chronic nephritis, in the earlier stages, is frequently benefited through the diuretic action of the drug, but later it does not have the prompt and decided effect which marks the exhibition of digitalis in the cases.

CLINICAL RECORD.

Foreign.

SUCCESSFUL TREATMENT BY INCISION OF PURULENT PERICARDITIS.

In the *New York Medical Record* of Nov. 25th last an account by Dr. H. Lilienthal of a case of purulent pericarditis given to the surgical section of the New York Academy of Medicine is reported. The case is a brilliant one. The patient was a boy, 15 years old. We have only space to give the chief points of the narrative. A pneumonia was resolving when, on July 14th, a pericardial murmur was heard for the first time. On the 17th the pulse had been irregular with an increase in præcordial dulness. On August 3rd streptococci as well as pneumococci were found in the sputum but no tubercle bacilli. On August 13th the pulse was 132, feeble, and irregular. The next day the pericardium had been aspirated and 18·5 ounces of pus removed. On the following day (August 15th) there was cyanosis and the condition was too grave for general anæsthesia. Eucaine β was the anæsthetic selected and about 10 minutes before the operation the patient received 10 minims of Magendie's solution of morphine. One drachm of a 6 per cent solution of eucaine had been used. Almost three-quarters of an inch of the fifth intercostal cartilage were removed about one-fourth of an inch to the outside of the sternum. The thickened mediastinal tissues, about an inch in depth, were incised under the guidance of an aspirating needle. When the pericardium was opened the pus gushed out very freely to the enormous amount of at least 40 ounces. Wilks and Moxon report a case in which 35 ounces were found post mortem. The wound was partly left open for drainage. About

Aug. 22nd the pulse had fallen to 110 and daily irrigations with decinormal saline solutions had begun. On Sept. 7th the boy was allowed out of bed for the first time and on the 27th he was discharged cured. At the time of the report the pulse was good and the general condition most satisfactory. We congratulate Dr. Lilienthal on so rare a case and so happy a result.—*Lancet*, Dec. 23, 1899.

A CASE OF INFANTILE HEMIPLEGIA ASSOCIATED WITH APHASIA.

By F. W. Ernest Hutchison, M.B., M.S. Glasg.

The patient, a male, aged two years, on Oct. 3rd, 1899, whilst playing, fell off a doorstep and when picked up was found "to be paralysed and unable to speak." I saw the patient about two hours afterwards. The right arm, leg, and lower part of the face and tongue were paralysed, especially the leg and arm. The angle of the mouth was drawn upwards and to the sound side. There was complete absence of speech. The little patient did not appear to comprehend anything that was said to him. Articles which he had been very fond of playing with and previously knew well by name now appeared quite incomprehensible to him when he was asked if he would like so-and-so, but directly they were exhibited to him he changed his expression to one of comprehension, smiled with delight, and wished for the same. The previous health had been good, and he had never suffered from scarlet fever, whooping-cough, or measles. He had always been a happy, lively little fellow. The fact that the onset of the paralysis had been so sudden indubitably pointed to the lesion being a vascular one. I carefully examined the heart but there was no valvular or other trouble. Indeed, the organ appeared to be perfectly sound. The urine was normal. The cause would appear to be due to a rupture of left middle cerebral artery. The pathology of infantile hemiplegia is well known to be shrouded in obscurity and is scarcely alluded to by writers. Strumpell's view that some of these cases are due to polioencephalitis cannot apply to this case on account of its very sudden onset and previous good health, although (I ought to have mentioned it before) the child was suffering from an intractable form of eczema of both of the lower extremities when taken ill. It might otherwise have given some colour to Strumpell's view. The treatment of the case was pursued on similar principles to that of adult cases and after a little time from half to one-minim doses of liquor strychninæ were given, alternating with two-minim doses of diluted phosphoric acid. The patient at first grew much worse and I almost felt sure he must die.

However, after I put him on the strychnine he began at once to improve. He grew stronger and slight movement appeared in the leg and a little later in the arm, but he was still quite speechless and stupid. The patient remained under my care for about six weeks, when he had to be removed to his home some distance off. Just before he left he had recovered very largely the use of his leg and arm but complete aphasia was still present. Quite recently I heard from his friends that he had grown very weak in every respect and the only thing he could say was "dada."—*Lancet*, Dec. 23, 1899.

A CASE OF NERVOUS PALPITATION.

By Andrew M. Neatby, L.R.C.P. & S. Ed.

Mrs. K. came to me on the 24th of April, 1896. She had been suffering from palpitation for about three months and also from considerable faintness. The attacks of palpitation came on suddenly with much violence. On one occasion an attack came on in a place of worship, compelling her to go out. She complains of frequently suffering from sensation of swelling or choking in the throat with dyspnœa and occasionally from anæsthesia down the right side. She used to suffer considerably from headache but has been freer from this trouble latterly. There is great weakness about the back with pain, aggravated by sitting and stooping. The appetite is fair, the bowels regular, and the sleep satisfactory. Sulph. 6 gr. i. n. and m. for 4 days, then to be followed by ignatia ϕ m. i ter.

13th May. Feels better "in herself." Back stronger and much freer from pain. The palpitation and throat symptoms persist. Naja 6 p. iii., n. and m.

1st June, 1896. Had an attack of palpitation on the evening of the 13th May and the day after, but did not have another till yesterday. This last attack, moreover, was but slight. She feels stronger and more fit for exertion. Continued once a day.

29th June, 1896. Palpitation better but has not yet completely disappeared. Back giving occasional trouble. Is having occasional headache over eyes and nose. Continued for two or three days, then naja 30, n. and m.

Patient did not call again, but wrote to me three months later to say that she was free from the palpitation and nervousness.

Remarks.—1. A comparison of the symptoms enumerated above with those that appear under naja in the *Cyclopædia* (iii. 328) will suggest the reflection that the patient needed no other remedy than the naja.

2. The symptom of palpitation occurs repeatedly in the provings described in the *Cyclopædia,* but is by no means so prominent as the reputation of the remedy in nervous palpitation would lead one to expect. See *Annals and Transactions of the British Homœopathic Society*, vi., 440.

3. The sense of choking, so well known in connection with the neurotic troubles of women, is recorded by Dr. Russell as having been experienced by himself when proving naja. He had never felt it before. *British Journal of Homœopathy*, xi., 594.

4. There is an interesting naja case recorded in the *Annals and Transactions of the British Homœopathic Society*, i., 297. This is, however, a case of organic heart disease. It nevertheless illustrates the relation of naja to palpitation, inasmuch as when that symptom persisted after nearly all the other symptoms had been relieved by lachesis, naja was given with very great benefit.—*The Monthly Homœopathic Review,* Dec. 1, 1899.

CRATÆGUS IN HEART DISEASE.

By A. H. Gordon, M. D.

Case I. Mrs. H., age thirty, became ill December, 1896 and was attended by her regular family physician, who is a competent homœopathic practitioner. A diagnosis of enlargement of the heart was made, and the case was carefully treated by homœopathic medicines for a period of six weeks. At the end of that time there having been no improvement, but rather an increase in the distressing symptoms, at the advice of friends she consulted a prominent allopathic physician. She was treated at home for several months by the physician with no change for the better; but on the contrary she became so incapacitated by her affliction that she was unable to move about the house at all without bringing on attacks of faintness and symptoms of complete collapse. At the time, in accordance with the advice of her physician, she was removed to St. Joseph's Hospital, this city, where she remained ten weeks in bed, under his constant attention, with the hope that the much vaunted "rest cure" would relieve her, for her condition was now so alarming that her friends had given up all hope of her recovery.

At the end of the ten weeks, there being no improvement, her husband took her home. At the time she was unable to walk across the floor without the symptoms of heart failure appearing. After a course of treatment by electricity with the usual result—no improvement—I was sent for, having been recommended by one of the

students of my class, who was a friend of the family. An examination of the heart determined the presence of hypertrophy with dilatation, displacement of apex beat, weak action, heart sounds prolonged, but no valvular lesions. Further physical examination disclosed an irregular and intermittent pulse, general anasarca, etc.; the least exertion caused dyspnœa, faintness and symptoms of collapse. No special cause for the heart trouble could be given by her, except many years of overwork and the abuse of coffee.

After listening to her account of the several courses of treatment she had received, I came to the conclusion that it was wise to try a new remedy in her case, which I had been using with good results when the usually indicated remedies had failed to relieve. I therefore prescribed *Crataegus oxyacantha*, five drop doses of the tincture in water every three hours. The results were simply marvellous; in three weeks she was able to visit me at my office, about two miles from her home, walking to and from the car with very little assistance, and her improvement was continuous from the first. In about three months the dropsy had disappeared, the heart's action was strong and regular, with only an occasional intermittence, and to live had become again a pleasure to her.

About this time she became pregnant (she was already the mother of three children, all living and in good health), which naturally alarmed her greatly, as she had no idea that it was possible for her to endure such a strain, as she well knew from past experience what was required, even in labor which was fairly normal, as hers had been. However, I did everything possible to get her into good condition before the time expired, and she passed safely through the crisis, with no further accident than a slight post-partum hemorrhage, which was easily controlled. She is now fairly well, as well I think as any one with an enlarged heart can expect to be. She does all her work in her own flat, for her family of five, and has gained greatly in weight and strength, although her nursing infant is now only eight months old. In her case *Crataegus* seems to have made it possible for compensation to be restored with results as stated.

Case II. Mr. L., age thirty-eight, a foreman of stock room in a large shoe factory, came to me for treatment for what had been called nervous prostration, in March, 1899. The history showed progressive loss of strength, indigestion, palpitation of heart, so severe as to interfere with rest at night; night sweats, profuse and exhausting, and intemperate use of liquor "to keep up on." He confessed to many forms of dissipation, late hours, the abuse of

stimulants above referred to, excessive venery, etc. The rapid irregular and intermittent pulse directed my attention to the condition of the heart, an examination of which disclosed hypertrophy, apex beat in sixth interspace to the left of nipple line, increased area of dullness on percussion, and of cardiac impulse which was of that heaving character noticeable in enlargement of the heart. There was present violent palpitation on excitement, and when more quiet distinct intermission every four or eight beats.

Having had gratifying results from *Crataegus* in several other cases, as well as in the one previously reported, I administered it to this patient also, five-drop doses of the tincture, four times a day. His improvement was immediate, and after about four weeks' treatment he felt so well I thought it unnecessary to continue the medicine, so dismissed him with careful directions as to diet, habits of life, etc. On my return from my vacation this summer I found an urgent call to Mr. L.'s on my book. Arriving at his home I found him in a pitiable condition. It seems that he felt so well after the attention in the spring he had thought it possible for him to resume his former habits of dissipation, which had culminated in a prolonged spree and had laid him flat upon his back. Unable to reach me on account of my absence from the city, he called in one of our allopathic brethren, who dosed him with all sorts and combinations of drugs, as evidenced by copies of his prescriptions, which I had friends to obtain for me from the druggist. The doctor had informed the friends that unless he rallied under the influence of medicines last prescribed it was useless to do anything more for him, as death was inevitable.

Under the benign influence of *Crataegus*, however, he rallied slowly, and with the help of some intercurrent remedies has made a recovery which is fairly complete. He has resumed his accustomed occupation, eats well, sleeps well, and feels well; the disagreeable and dangerous symptoms have completely disappeared, although, of course, the hypertrophy still remains and there is an occasional intermittence, perhaps once in fifty beats. He is still taking the *Crataegus*.

In conclusion would say that I have used *Crataegus* with uniform success in weak heart accompanying or following la grippe, diphtheria or any disease, of like nature. I have also used it in two cases of valvular disease, one of which was benefited greatly and the other not at all. I will not give them in detail, as I have already taken up so much time; suffice it to say that I believe we have in *Crataegus*

oxyacantha an exceedingly valuable remedy in many cases of heart disease, and no doubt other diseases as well, and one that will be well worthy of much study and investigation and infinitely superior in weak heart and conditions of collapse to the *Digitalis*, in potency, which it was custom formerly to use, or the *Strychnia*, *Glonoine* or the diffusible stimulants used by our allopathic brothers.—*The Clinique*, Oct., 1899.

A CASE OF OVARIAN TUMOR, CURED BY *APOCYNUM CANNABINUM.*

By Dr. Oscar Hansen.

Dr. Oscar Hansen was consulted by a woman of 26 years, who was married, and who complained of weakness, loss of strength, slight appetite, great pain during menstruation, and frequent desire to urinate. The abdomen was increased in size, and more so on the left, with shooting pains in the left leg. Slight constipation and urine normal. On examination, a fluctuating tumor was found in the left parametrium. An Ovarian tumor was suspected, and apis, hepar and bryonia were given; but as her condition gradually grew worse, she consulted a specialist, who confirmed the diagnosis and advised removal of the cyst. She refused. As no particular symptoms were present, apocynum cannabinum θ, five drops, three times a day, gradually increased it to fifteen drops, were given. She took this remedy for about eleven months, and then it was found that the growth was about gone. Since then she has been well, and fourteen days ago no trace of the cyst was to be detected. Under the remedy, the amount of urine passed was about double that of the normal.—*Homœopatisk Tridskrift*, No. 12, 1898, in the *Hahnemannian Monthly*, December, 1899.

A CASE OF NEURALGIA OF THE SPERMATIC CORD.

By Prof. A. L. Blackwood.

Mr. M., aged forty-nine, complained of severe pain in the right spermatic cord, which was shooting and darting in character. Careful examination of cord revealed slight tenderness which I believed was due to the hot applications used, but no organic lesion, as blood cyst, tubercle, hernia or varicocele could be detected. There was no history of syphilis, and no rise of temperature. He was very irritable and quarrelsome, resisting the endeavors of his friends to relieve him. The bowels were constipated, and he was worse early in the morning. Nux vomica 6x was given and opiates were stopped; this was of some benefit; the bowels were not so constipated, and he was not so irritable. He now remarked that he wished he could keep his mind employed, as thinking about his disease made the pain worse. This led me to give oxalic acid 6x, which cured the man. It is a feature of oxalic acid that as soon as the patient thinks of the pains they return.—*The Clinique*, September 15, 1899.

Gleanings from Contemporary Literature.

HYPOTHERMIA.

By E. B. HULBERT, M.D. Durh., M.R.C.S. Eng., L.R.C.P. Lond.

A man, aged 36 years, married, the father of three children, was admitted into University College Hospital under Dr. Charlton Bastian (whose clinical clerk I happened to be at the time, and for whose kind permission to make use of the notes of the case I am deeply indebted) on April 16th, 1887, complaining of drowsiness and occasional frontal headache of about two years' duration. He had had scarlet fever when he was a lad and soft chancre ten years before coming under observation, but he denied syphilis. There was no history of nervous disease in the family. He had been for some years a chemist's assistant, but had latterly been dismissed from his situation in consequence of his marked drowsiness, which at times led to his falling asleep over his meals and when at work, and because he was not always responsible for his actions. Thus on one occasion he was found on the doorstep of a strange house far from home, and on being questioned could give no account of himself and had no recollection as to how he arrived there.

As the man remained in the hospital, with the exception of about ten weeks, until his death on Jan. 2nd, 1888, the notes of the case are naturally voluminous, and the following epitome of his leading symptoms may suffice. Delayed cerebration; occasional mild delirium, diurnal or nocturnal, and at times of a restless type; speech slow and scanning; the skin temperature was obviously depressed; pin-point pupils, reacting to accommodation but not to light; knee-jerks and ankle clonus were absent; no definite spasms or paralysis, either of motion or sensation, until a late period in the case, when generalised twitching movements of the limbs and face occurred; during the same time there was noted want of control over the sphincters; the pulse was regular, of fair volume, the rate varying, directly as the temperature, between the extreme limits of 36 and 170 per minute; the respirations also varied in the same manner from 10 to 48 per minute and at the close were of the Cheyne-Stokes type. The somnolence, always present, was variable in degree but increased as time wore on, and the patient finally died in a comatose condition. The diagnosis made was that of some diffuse degenerative change in the brain, possibly sclerotic in character, and beginning chiefly in the pons and medulla.

A most careful post-mortem examination was made and numerous microscopical sections were cut from the cerebrum, cerebellum, pons, medulla, &c., but no gross lesion was discovered in any part of the body.

The interest of the case is chiefly centred in the records taken of the temperature, which was taken on 88 days, commencing on Oct. 5th, 1887, several observations, even as many as 11, being made daily; on only 18 days was the temperature found to register above 98·4° F. The rectal

thermometer, which was used for the majority of the readings, was made by Hawksley and was very carefully compared with a standard instrument registered at Kew, made by Casella, and great care was taken to avoid erroneous observations, thermometers being not infrequently placed simultaneously in the mouth, the rectum, the axilla, and even in the urethra. From Oct. 6th to the 16th inclusive the temperature was not accurately recorded, as the ordinary clinical thermometer used was not marked below 95. The same happened on Nov. 2nd and 3rd, and again from Nov. 9th to the 14th; the rectal instrument on this date recorded 83·3, and on the same day, without obvious cause, the temperature rose 12·6 in nine consecutive hours, reaching 95·9. Two days later it sank 13 in 16 hours, the thermometer left in the rectum for half an hour marking 82·3. On the next day the temperature was slightly lower, and on the following day the minimal temperature in this case was recorded—viz., 81·6 in the rectum (half an hour's observation)—and simultaneously a surface instrument placed on the chest-wall for two hours registered 75·5. At this stage a hot bath was given, the temperature of the water being gradually raised from 98 to 105, and the patient's temperature rose 13·1 in 67 minutes and 19·5 in 18 hours. It then became slightly raised above normal for a day or two and again descended, a reading of 90·2 (skin of the chest one hour) being obtained on Nov. 21st. The descent continued with fair uniformity, successive readings of 91·5 (axilla), 89·1 (axilla), 88·3 (rectum), and 85·7 (rectum) being obtained. An hour spent in a hot bath again produced a rise of 13·6, but the effect was only temporary. 85·5 (rectum) and 85·3 (rectum) being noted. Here the temperature rose somewhat rapidly, and shortly after death marked 104·8 in the rectum.

The literature on the subject of subnormal temperature appears, on the whole, to be scanty, and it is certainly, according to my experience, widely diffuse. A brief epitome may, therefore, not be entirely out of place.

Erichsen says that in fracture of the lower cervical region the temperature may rise to 111 or may sink to 81, but that the cause is not well understood.

Roberts enumerates amongst the conditions producing subnormal temperatures shock, collapse, severe injury to the upper part of the spine, some diseases of the brain or spinal cord, starvation, severe hæmorrhage, and some chronic wasting diseases—e. g., cancer. Regarding cholera, he says that in the stage of collapse the temperature in the mouth ranges from 79 to 88, in the axilla from 90 to 97, but that it reaches a much higher level in the vagina and rectum. Also, "a very low temperature has been noted in carbolic acid poisoning and in sclerema neonatorum." He states, "Should the temperature fall below 93 death almost always results."

Russell Reynolds corroborates certain of these statements.

Bristowe says: "In collapse—the result of severe injury—the temperature even in the rectum may fall (Wagstaffe) as low as 82·15."

Quain states: "A temperature of 71·6 has been observed in sclerema neonatorum." And again, "The whole range of temperature within which life can well be maintained is comprised between 90 and 110.

Landois and Stirling mention Löwenhardt as having found that "in paralytics and in insane persons several weeks before their death the rectal temperature was 86 to 87·8." Also, "Beckterew found in dementia paralytica before death 81·5 in the rectum; the lowest temperature observed and life retained was in a drunken person—75·2 (Reinke, Nicolaysen)."

Fagge says: "A great lowering of temperature by *force majeure*, as Liebermeister terms it, is well seen in persons picked up insensible in the streets during cold weather. Cohnheim alludes to cases of this kind in which the thermometer in the rectum has not risen above 86, 79, or even 75. The pupils are then dilated and sluggish, whilst the pulse and the respiration are greatly reduced in frequency, but unless things have gone too far for recovery to take place such persons under suitable treatment regain their normal temperature in a few hours, or even pass into a condition of reactive pyrexia." Regarding the stage of collapse in cholera he says: "According to Goodeve a thermometer placed in the mouth indicates from 79 to 82. In the axilla, however, the temperature is seldom below 93 or 94 and in the rectum or vagina it rises through the period of collapse, reaching 100, 102, or even 104."

Gould quotes a case recorded by Duffy in which the temperature in the mouth and axilla marked 84. The patient was a negress, aged 35 years; she aborted, and death took place on the following day.

Osler treats the subject at greater length. Amongst conditions giving rise to a subnormal temperature he refers to: (*a*) Acute alcoholism, especially when aggravated by exposure to cold. Thus are explained the lowest reported temperatures. He mentions a patient who was admitted under these conditions with a temperature of about 75; ten hours later the temperature had not risen to 91. (*b*) Cerebral hæmorrhage. "Here it is often subnormal" (Bastian). He quotes a case in which it sank below 95. (*c*) Heat exhaustion, especially when combined with physical exertion. It may be as low as 95 or 96. (*d*) Acute tuberculosis. (*e*) Ague (cold stage). The skin temperature may be low. (*f*) Pernicious malaria—the algide stage. (*g*) Chronic tuberculosis. He quotes a case in which the temperature was 95. (*h*) Tuberculous meningitis. At the close the temperature may be as low as 94. (*i*) Uræmic convulsions—after the attacks.

Finally, Wunderlich, in his monograph on Medical Thermometry, published by the New Sydenham Society, as the result of 16 years' assiduous work in this field, deals still more elaborately with the subject. He says: "Exceedingly low temperatures are very commonly met with in the following: In the remissions of a remittent fever; in consequence of loss of blood, or powerful evacuations; in the course of defervescence when this is excessive, and sometimes in the death struggle." Treating of collapse, he observes that the temperature very seldom sinks below 91·4. He defines "collapse temperatures" as those below 96·8 and classifies them thus; (*a*) deep fatal algide collapse below 92·3; (*b*) algide collapse from 92·3 to 95. In these circumstances it is possible to save life, but the patient is in the greatest danger; (*c*) moderate collapse from 95 to 96·8; this is in

itself without danger. He quotes Fleury as having observed the temperature of a subject in a cold bath sink to 93·2, or even to 84·2. Later he says: "Although in certain cases of cholera temperatures of 78·8, or even lower, have been observed on the surface of the body we may be almost sure (from other observations in the same disease) that the rectal and vaginal temperatures were considerably higher." Again: "Löwenhardt has published four cases of insanity in which lower temperatures occurred than in any hitherto observed. Before death, and indeed for several days, they showed 77, 85·1, 74·7, and 82·4. They were very old people who got out of bed in the coldest time of the year, and ran about naked, and from their dirty habits were constantly being bathed, and who took hardly any food; in one case the pulse was only 45, and in another only 23 per minute." He quotes Magnan as giving a vaginal temperature of 78·8 in a drunken woman who lay out exposed to sleet all night. The temperature became normal in two days. Wunderlich states that the lowest temperature which he had seen followed by recovery was 92·3 (the pulse beating 62 times in the minute). This was an instance of "collapse of defervescence" in enteric. Again, referring to cholera, he observes: "The cutaneous temperature even in the axilla during the algide stage is, as a rule, diminished, sometimes, indeed, very greatly so, yet not often below 95. The temperature under the tongue may be still more diminished. In the stage of asphyxia the temperature there seldom exceeds 87·8, and even in cases which recover may fall to about 78·8. If it fall below this recovery would appear to be impossible." A little further on he quotes two cases, reported by Fischer, of injury to the cervical cord in which temperatures of 93·2 (rectum) and 86·3 (axilla) were recorded; and likewise a case (Wagstaffe) of fracture with dislocation of the sixth cervical vertebra where a temperature of 92·3 was recorded on admission which sank to 81·7 in the ensuing 45 hours, the patient dying three hours later. Later still, he refers to the influence of inanition, especially when aggravated by exposure, loss of blood, vomiting, diarrhœa, exposure to cold, &c. Just before death the temperature may be very low, especially in the syphilitic marasmus of children, of which he gives an instance with a temperature of 77 in the rectum. He also notes a case of ordinary marasmus in which the temperature was 83·4, and declares on Roger's authority that the axillary temperature is very low in congenital induration of the areolar tissue (sclerema) of new-born children. Roger found that in 29 such cases the average temperature was 87·8, and of these in seven cases it marked less that 78·8.

Greenhow has reported an axillary temperature of 84, but the nature of the case is not stated, and included in the charts at the end of Wunderlich's remarkable monograph are three examples of subnormal temperatures – Fig. 10, temperature 92·3, typhoid with collapse (this patient apparently recovered); and Figs. 75 and 76, temperatures 95 and 95·1 (both these patients died from acute miliary tuberculosis).—*Lancet*, Jan. 13, 1900.

MIND AND MORALS IN ANIMALS AND SAVAGES.

By A. O'Neill Daunt.

With regard to the intelligence of ants, I take the following from Romanes. Prof. Leuckart placed round the trunk of a tree which was visited by ants as a pasture for aphides, a broad cloth soaked in tobacco water. When the ants, returning home down the trunk of the tree, arrived at the soaked cloth, they turned round, went up the tree again to some of the overhanging branches, and allowed themselves to drop clear of the obnoxious barrier. On the other hand, the ants which desired to mount the tree first examined the nature of the barrier, then turned back and procured from a distance little pellets of earth which they carried in their jaws, and deposited one after another upon the tobacco cloth till a road of earth was made across it, over which the ants passed to and fro with impunity. Romanes observes that this interesting observation of Leuckart's is a corroboration of an almost identical one made more than a century ago by Cardinal Fleury, and communicated by him to Reaumur, who published it in his "L'Histoire dee Insectes," in 1734. The Cardinal smeared the trunk of a tree with birdlime in order to prevent the ants from ascending it; but the insects overcame the obstacle by making a road of earth, small stones, etc., as in the case just mentioned. The Cardinal also in another instance saw a number of ants make a bridge across a vessel of water surrounding the bottom of an orange tree tub. They did so by conveying a number of little pieces of wood, the choice of which material, instead of earth, stones, etc., as in the previous case, seems to betoken no small knowledge of practical engineering.

Büchner, as quoted by Romanes, records a similar exhibition of intelligence: The ants behaved in a yet more ingenious fashion under the following very similar circumstances. Herr G. Theuerkauf, the painter, writes to the author, November 18, 1875: "A maple tree standing on the ground of the manufacturer, Vollbaum, of Elbing (now of Dantzic), swarmed with aphides and ants. In order to check the mischief, the proprietor smeared about a foot width of the ground round the tree with tar. The first ants who wanted to cross naturally stuck fast. But what did the next? They turned back to the tree, and carried down aphides which they stuck down on the tar one after another, until they had made a bridge over which they could cross the tarring without danger. The above named Vollbaum is the guarantor of this story, which I received from his own mouth on the very spot whereat it occurred."

Of ecitons, Mr. Belt says:

"I shall relate two more instances of the reasoning faculty in these ants. I once saw a wide column trying to pass along a crumbling, nearly perpendicular slope. They would have got very slowly over it, and many of them would have fallen, but a number having secured their hold and reaching to each other remained stationary, and over them the main body passed.

"Another time they were crossing a watercourse along a small branch

not thicker than a goose quill. They widened this natural bridge to three times its width by a number of ants clinging to it, and to each other, on each side, over which the column passed three or four deep; whereas, excepting for the expedient, they would have had to pass over in single file, and treble the time would have been consumed. Can it be contended that such insects are not able to determine by reasoning powers which is the best way of doing a thing?"

When ants have to cross a stream too wide for branches to span, they use chips of wood as rafts, and these are joined together by a chain of ants which hold on to each other till the strain from the stream becomes unequal to their strength. These sections continue their voyage, the ants on the shore meantime constantly launching fresh rafts, which are built up into sections and manned, shoved off, and are again broken up in the same manner. Thus the process continues until the whole body of the insects has crossed the water.

Dr. Lincecum writes as follows of the ant farms:

"There can be no doubt of the fact that the particular species of grain-bearing grass mentioned above is intentionally planted. In farmerlike manner, the ground upon which it stands is carefully divested of all other grasses and weeds during the time it is growing. When it is ripe, the grain is taken care of, the dry stubble cut away and carried off, the paved area being left unencumbered, until the ensuing autumn, when the same 'ant rice' reappears within the same circle, and receives the same agricultural attention as was bestowed upon the previous crop—and so on, year after year, as I know to be the case in all situations where the ants' settlements are protected from graminivorous animals."

In a subsequent letter to Darwin, Dr. Lincecum further says: "I have not the slightest doubt of it (i. e., that ants plant seeds for a crop), and my conclusions have not been arrived at from hasty or careless observations, nor from seeing the ants do something that looked like it, and then guessing at the results. I have at all seasons watched the same ant cities during the last twelve years, and I know what I stated in my former letter is true. I visited the same cities yesterday, and found the crop of ant rice growing finely, and exhibiting also the signs of high cultivation, and not a blade of any other kind of grass or weed was to be seen within twelve inches of the circular row of ant rice."

Romanes, after alluding to Pliny's assertion that certain ants in the south of Europe practiced the strange habit of interring their deceased friends, quotes the following account of an observation by Mrs. Hutton, who, having killed several soldier ants, returned half an hour afterward to the place where the bodies were lying, and thus described what she saw:

"I saw a large number of ants surrounding the dead ones. I determined to watch their proceedings closely. I followed four or five that started off from the rest toward a hillock a short distance off in which was an ants' nest. This they entered, and in about five minutes they reappeared, followed by others. All fell into rank, walking regularly and slowly two by two,

until they arrived at the spot where lay the dead bodies of the soldier ants. In a few minutes two of the ants advanced and took up the dead body of one of their comrades; then two others, and so on, until all were ready to march. First walked two ants bearing a body, then two without a burden, then two with another dead ant, and so on till the line was extended to about forty pairs, and the procession now moved slowly onward, followed by an irregular body of about two hundred ants. Occasionally the two laden ants stopped, and laying down the dead ant, it was taken up by the two walking unburdened behind them, and thus by occasionally relieving each other, they arrived at a sandy spot near the sea.

"The body of ants now commenced digging with their jaws a number of holes in the ground, in each of which a dead ant was laid, where they now labored on until they had filled up the ants' graves. This did not quite finish the remarkable circumstances attending the funeral of the ants. Some six or seven of the ants had attempted to run off without performing their share of the task of digging; these were caught and brought back, when they were at once attacked by the body of ants and killed upon the spot. A single grave was quickly dug, and they were all dropped into it."

This evidence of intelligent action on the part of ants might be extended indefinitely did space permit. It is not necessary to take each link in the zoological chain, and to study the evidence afforded by it in favour of the contention that the minds of animals, as exhibited by their actions, appear to be essentially the same in kind as that of man. A few examples taken at random will suffice. As so much has been written of the intelligence of the dog, I shall not notice this animal, but only such as live in natural freedom.

In Vol. VIII. of the "Miscellaneous Publications of the United States Geological Survey," Captain Elliot Coues thus describes the ingenuity of the wolverine:

"At Peel's River on one occasion a very old carcajou discovered my marten road (i. e., line of traps set for martens), on which I had nearly a hundred and fifty traps. I was in the habit of visiting the line about once a fortnight, but the beast fell into the way of coming oftener than I did, to my great annoyance and vexation. I determined to put a stop to this thieving and his life together, cost what it might. So I made six strong traps at as many different points, and also set three steel traps. For three weeks I tried my best to catch the beast without success, and my worst enemy would allow that I am no green hand in these matters. The animal carefully avoided the traps set for his own benefit, and seemed to be taking more delight than ever in demolishing my marten traps, and eating the martens, scattering the poles in every direction, and caching what baits or martens he did not devour on the spot. As we had no poison in those days, I next set a gun on the bank of a little lake. The gun was concealed in some low bushes, but the bait was so placed that the carcajou must see it on his way up the bank. I blockaded my path to the gun with a small pine tree, which completely hid it. On my first visit afterward I found

that the beast had gone up to the bait and smelled it, but had left it untouched. He had next pulled up the pine tree that blocked the path, and gone around the gun and cut the line which connected the bait with the trigger, just behind the muzzle. Then he had gone back and pulled the bait away, and carried it out on the lake (i. e., on the ice). where he lay down and devoured it at his leisure. There I found my string. I could scarcely believe that all this had been done designedly, for it seemed that faculties fully on a par with human reason would be required for such an exploit, if done intentionally. I therefore rearranged things, tying the string where it had been bitten. But the result was exactly the same for three successive occasions, as I could plainly see by the foot-prints ; and what is most singular of all, each time the brute was careful to cut the line a little bit back of where it had been tied before, as if actually reasoning with himself that even the knots might be some new device of mine, and therefore a source of hidden danger he would prudently avoid—I came to the conclusion that that carcarjou ought to live, as he must be something at least human, if not worse. I gave it up, and abandoned the road for a period."

This curious animal has the singular habit of shading his eyes with one of his forepaws when carefully scrutinizing an object at a distance.

I must now say a few words on the moral sense of animals. I have already adverted to the fact, which has been frequently observed to occur, that animals are capable of risking and even sacrificing their lives in the service of others. Why should we, when we behold an instance of this disinterestedness, ungenerously ascribe it to any lower impulse than we should in the case of a similar act on the part of a human being? It is "instinct" we are told ; and we are further told that instinct arises as the mechanical result of millions of actions of the same kind in the life history of the species. A moment's reflection will show the absurd inappropriateness of this explanation of such actions, not to speak of the insufficiency of such a theory of the origin of instinct. In general, where animals exhibit unselfishness, courage in facing danger to aid others, make intercession in combat, show conciliation and love of knowledge and hospitality, evince interest in the proceedings of their fellows or of man, and sympathy in their sufferings, seem actuated by a sense of duty, and show a sense of personal merit for actions worthily performed, a selfish end for these manifestations is too often asserted to be the motive. But before we judge animals thus harshly let us reflect that in similar cases man himself no less frequently (and, I believe we may assume, much more frequently) is actuated by selfish and interested personal ends. Lindsay says that animals possess a sense of right and wrong, with a power of choice between them ; that they commit crimes and are aware of the criminality of their acts ; that they have a wonderful power of self-control, and possess not only a moral, but even a religious sense (presumably meaning a sense of reverence), including a conscience. They also have a knowledge and dread of consequences ; can deliberate and decide on proposed courses of conduct ;

have freedom of will and the faculty of voluntary action. They can balance or weigh present or immediate pleasures against prospective pains; appreciate rewards or punishments; perceive and correct their own mistakes, as well as frequently those of man; have a knowledge of duty and of trust. From these attributes he infers the possession of a sense of responsibility, which is realized by all those who base their system of training and education of animals on rewards and punishments. This possession of responsibility appears to have been understood by the Jews, according to whose law (Exodus xxi., 28-32) an ox that had gored a man or woman was condemned to be stoned to death. Draper states that a horse, which had been taught many tricks by its master, was adjudged to be burnt to death at Lisbon 1601, as being possessed by the devil. During the middle ages similar instances of animal execution for crime were numerous. Sometimes even animals had to pass through the ordeal of combat, a champion being assigned to them. Pierquin says that dogs have been accepted as witnesses in courts of justice. It is well known that man has often trained dogs to act as his accomplices in crime, and by a perversion of justice, the animal has been condemned to death and his more guilty owner allowed to go free.

Innumerable instances could be quoted to show the love of animals for their offspring, their self-abnegation for the advantage, comfort, or preservation of their young. In this alone how often they set example to man, who even in civilized communities so far falls short of them in this virtue as to render necessary the establishment of protection societies for children in our chief towns and cities. The late Lord Beaconsfield said that infanticide was as common in England as upon the banks of the Ganges. In fidelity and unswerving affection of the most unselfish kind, what an example have we in the dog! Sometimes this is equally observable in women; seldom in a man. What a religious moral, too, may be drawn from this devotion of the animal to his master, who is his god! Would that man with his boasted pre-eminence would imitate his humble friend, and evince a like devotion and love toward his God!

It is now necessary to turn from animals to man, and to consider what are his characteristics as visible in the savage state, and how the outcome of his "reason" compares with that of the intelligence of animals. In the first place, let us inquire what amount, if any, of religious sense actuates a low type of savage. Lindsay says that missionaries, traders, travellers in various parts of the world, as well as naturalists, who are closer observers, inform us that there are, or were, certain savage races utterly destitute of any religious sense whatever, having apparently no idea of personal responsibility, no sentiment that could be characterized as religious, no form of worship, and no observance. The Rev. William Colenso, of Napier, New Zealand, says that the Maoris had no form of religious worship, and that whether we define religion as reverence toward God, or as a form of fear of future punishments, or as a hope of reward, they equally were devoid of it; the idea was wholly absent from their minds. God was not to them

even a vague abstraction ; they knew nothing of Him ; they did not even practice idolatry, having no idols. They paid no worship to any object evident to their senses, neither to the sun, moon, stars, nor to any personification of natural forces. Another writer quoted by Lindsay says of them: "The great fact observable from a consideration of their traditions . . . is that the peeple had no idea of a Supreme Being, the Creator of all things in heaven and in earth." These observations are accurately descriptive of many other savage tribes in various countries. It is apparently true that while among some savage peoples an idea, however dim, which might be described as religious prevails more or less, there yet are other peoples so low in the scale of intellectual development as never to have formulated any kind of theory of a religious character. When Moffatt, the well known South African missionary, first visited the Bechuanas, he found that they had absolutely no idea of a god, nor had they any conception of a future state. They had not even any idols, and on one being shown to a chief as the object of adoration by other men, he could not repress his amazement, observing that he did not understand how anyone could be found foolish enough to worship an article made by his own hands. This total absence of a religious sense was also noticed by Dr. Livingstone among the Makondes in the Rovuma country. "They knew nothing," he says, "of a deity ; they pray to their mothers when in distress ; they know nothing of a future state, nor have they any religion except a belief in medicine. They blame witches for disease and death. . . . They fear the English." Dr. Nixon, Bishop of Tasmania, says that he was obliged to desist from all attempts at conversation because the poverty of the native language, and of their conceptions, was such as rendered every higher religious idea impossible to them. The Andaman Islanders are described as similarly destitute of the religious sense, Jesuits and Moravians having both failed to impress them. Sir Samuel Baker gives a like character to the natives of the Albert N'yanza region, where he was informed by the head of the Austrian Mission that "the mission was absolutely useless among such savages." In other portions of Africa the same observations have been made. At Dahomey the natives have no conception of God, neither have they any belief in future rewards or punishments. Baker and Hartshorne state that the Veddas of Ceylon are wholly ignorant of the existence of God, of the soul, of life after death. Yet in this instance there appears a faint trace of some superstition connected with death, as they make an offering to a deceased friend ; but whether it be simply a mode of commemorating him does not appear.

Another authority, who had the advantage of observing them personally, expresses the belief that they know nothing whatever of anything having a religious significance. The same ignorance prevails among the Angolese. Of King Kamrasi, in the N'yanza region, Baker observes that "in this wild naked savage there was not even a superstition on which to found a religious belief."

It is needless to adduce testimony from the many regions on the globe in

which this dense ignorance exists, in order to show that man in the natural state is not necessarily informed by his reason of his personal responsibility to a Supreme Being for his actions in this life, and of a state of reward or punishment in the next proportionate to his merits. Let us rather view him in his social relations, and try to ascertain whether his limited intelligence differs in kind from that of the animals by which he is surrounded.

Buchner, writing of certain aborigines of Borneo, says that they are destitute of an articulate language of their own, and only learn with difficulty to pronounce a few Malay words.

Much of the language of certain tribes, such as the natives of the Philippines and the bushmen of South Africa, consists largely of inarticulate sounds, clicks, facial grimaces and gestures. When wishing to converse at night, a traveller states that it is necessary for them to halt and make a fire in order that by its light this gesture language may be read. The Apache also communicates rather by gesture than by sounds.

It is said that the language in use among the Fauns of West Africa is so little like human speech that that term is inapplicable to it.

With regard to the mental status of the savage, there appears to be a consensus of opinion that certain races are unimprovable, incapable of progress. For thousands of years the ape men of India have lived in trees, and they still do so in common with monkeys. The Bukones live on a framework or platform of sticks among the branches of the trees, the construction very much resembling the roost of the anthropoid apes. The Veddas live like the animals, anywhere or anyhow. No progress has taken place among such races, nor do they seem capable of it.

Some savages are incapable of counting to five, many cannot count to ten. Countless tribes go naked, having no sense of modesty. When the Ladrone Islands were first visited by the Spaniards, the natives were ignorant of the use of fire. Many tribes or nomadic parties do not cook their food, eating their meat raw. Others are known to eat dirt, ordure, carrion; parturient mothers devour their own placenta.

Cannibalism is well known to be practiced by certain tribes; some eat their own children or other relatives. The Uaupes disinter their dead, burn them, and swallow the ashes. Personal cleanliness is as little known among many savages as among some animals. Filial affection is unknown. A father having died during the night, his sons heaved his body over the camp fence to the hyenas, and next morning amused themselves by kicking the skull round the kraal like a football. Gorging and sleeping are all the ideas of happiness formed by a bushman of South Africa.

Savages are also characterized by an absence of even the most ordinary foresight, although continually suffering from the want of it. The Caribs formerly possessed no appliances for fishing. The Mincopies or Andaman Islanders have hardly any tools; the Abyssinian Dokos possess no weapons. Some savages tear off the husk of cocoanuts with their teeth, using hands and feet to hold the nut like a monkey. Doko mothers are said to suckle their children but for a short time, abandoning them without scruple. This

practice has also been observed among some of the natives of Australia. Richerer accuses the bushmen in South Africa of smothering or strangling their children when there is scarcity of food. Some of the Indians in Northwestern America allow their aged to die of hunger for the same reason. Buchner says that in New Caledonia the aged are buried alive.

Many savages evince no respect for the dead, nor have they any rites of interment. Veddas seem unable to distinguish between colors. The animal faculties of keenness of scent, sight, hearing, sense of direction, are highly developed. Lindsay says that so stupid are some of the aborigines of Australia and Borneo, that they are unfit to be used as slaves. He quotes testimony to show that the Mincopies are untamable, and states that among the Veddas memory is almost wholly absent, instancing that a man could not even remember the name of his wife until he happened to see her, when he mechanically uttered it. He ascribes to the lower types of savages in general, incapacity of generalization, want of originality, ignorance of arithmetic, absence of idea of time, of the idea of knowledge, of legislation, of social laws or regulations, want of the idea of property among some Australians; ignorance of history; want of policy or plans of action, of government, as among the Dokos, of commerce, of agriculture, of any industry, of money or its equivalent, of arts, absence of laughter, as in the Veddas, of facial expression as in the Digger Indians and Botocudos, of specific language as in the Mincopies, hence of conversation, of salutation, as in the Apaches. In beings such as these the reasoning faculty seems to be in abeyance. Their social and intellectual status compares unfavorably with that of ants or bees; their morals are below those of anthropoid apes, or animals in general. The animal mother defends her offspring at every cost; the human savage mother, to avoid a little inconvenience, puts it to death. The animal detects incapacity in its young to feed itself (as happens in cases of imbecility), and supplies it specially with food; as has been noticed by Houzeau; man would not often determine the cause. A writer instancing the stupidity of the Africans in British Guiana says that their natural stupidity borders so nearly on imbecility, dementia, and amentia that it is difficult to say where a normal state ends and an abnormal one begins. There is hardly a condition of the animal mind which has not its analogue in that of man. Every cause which arouses mental activity in the animal is evidenced in the same manner in man; such incentives as grief, joy, pain, and hope, fear, love, reverence, gratitude, honesty, sense of trust, obedience, love of offspring, caution, the musical sense, anger, suspicion, revenge, sense of humor, and many others, produce action in animals identical with the results in man. Animals possess will, memory, understanding, exhibit purely instinctive and reflex actions as does man; fear death, and have often been credited with superstitious terror. Aquinas expresses the opinion that animals have souls, which, however, he gives them in common with plants, but to which he denies immortality.

With regard to this limitation it is only necessary to say that we can believe it when we find a single instance of anything which, having once

come into being, ceases to be. It is against all analogy in Nature. Are we to admit immortality, unending existence, for the ultimate elements of the animal body, the inferior part, and deny it to the soul, the vital principle the superior part, for which the former merely serves as the habitation. It would then appear that the evidence furnished in the case of man for the possession by animals of a mind only differing from the intelligence of the human in degree and not in kind must be held also to infer their possession of a soul. If this be so, and I do not know of any more valid objection to it than theological prepossessions and prejudices, we must be prepared to consider the question of the rights of animals from a new and advanced standpoint. However this may be, I think an impartial review of the evidence for the identity in kind of the animal and human mind, especially in the light afforded by the doctrine of evolution, must satisfy any but the irreconcilably prejudiced. The subject is a vast one, and I have, I fear, done it scant justice ; but I trust I have said sufficient to show that it is not one which can be regarded as closed by the decisions of certain oldfashioned authorities.—The Humanitarian—*Scientific American Supplement*, Nov. 11, 1899.

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A FRESH BATCH OF OPINIONS ON THE DEFINITION OF HOMŒOPATHIC PHYSICIAN.

IN our last number while we gave our own opinion, we gave also the opinions of ten distinguished members of our school, on the definition of Homœopathic Physician adopted by our largest organization, the American Institute of Homœopathy, and also by another of our societies, the Homœopathic Medical Society of New York. The *North American Journal of Homœopathy*, from the December number of which we took these opinions, has, in the January number of the current year, published the opinions of six more of our confrères, which we have great pleasure in giving below entire, in order that our readers may see that notwithstanding some minor differences, these latter opinions like the former agree in endorsing the spirit of the definition.

It will be seen that two alterations have been suggested in the definition. One by Dr. McClelland is to introduce the word "general" before the word medicine, the definition running as follows: "A Homœopathic physician is one who adds to his knowledge of *general* medicine a knowledge of Homœopathic therapeutics," &c. The other by Dr. F. Park Lewes is more radical. He would abolish the epithet "homœopathic" as a

designation of physician, and substitute for it the epithet "cultured," because in his judgment "the time has arrived when all sectarian designations should be dropped."

With reference to the retention of a sectarian name Dr. A. B. Norton, of ophthalmological fame, is of opinion that "the banner of *similia* must continue to wave until the barriers are all broken down." "If as honest men we believe in homœopathy," asks he, "is it not our duty to maintain our distinctive title until its principles are recognized and admitted by all schools of medicine." On this, one of the most vital questions, which can affect our school, and on which Dr. Norton invites discussion, we cannot do better than remember what Dr. Alfred C. Poper and Dr. Richard Hughes, of England, said long ago. Dr. Pope put the matter very clearly and forcibly before the members of the British Homœopathic Society in 1882: "While, however, I insist thus earnestly upon the retention in our medical literature of the word homœopathy, as one that is not only legitimate, but full of meaning, and essential to real therapeutic progress,—it is its scientific employment, and not its professional use, that I desire to enforce. The appearance of this word upon the door-plate of a practitioner is, to say the least of it, an exhibition of bad taste....The word homœopathist, in such a position, suggests the existence of a distinct profession. This homœopathy is not. It is the highest development the therapeutic art has attained at the present moment. It is, therefore, not only an integral part of medicine, but it is the most scientific phase on which that department of medicine known as therapeutics has, so far, entered."

Dr. Hughes, in his admirable *Manual of Therapeutics*, (2nd Edition, 1877,) in reference to the duties of the homœopathic physician, in his own felicitous way, writes: "Our name is physician; homœopathic is but an *addendum*. We are priests of the one Catholic Church of Medicine, though the prevailing majority would fain deny our orders and invalidate our sacraments. They force us into a sectarian position; but they shall not inspire us with a sectarian name. We claim our inheritance in all the Past of Medicine, and our share in all its Present. We assert and use our liberty to avail ourselves of every resource which the wit of man has devised or shall devise for the arresting

of death and the relief of suffering. We know of no obligation to the paramount one of doing our best for our patient."

It is some consolation to us to learn from the letter of Eldridge C. Price that in the early stages of Homœopathy in America, as here in India, practitioners of the system "were recruited from the ranks of the ministry, who, having failed in preaching to the souls of men, undertook to practise upon their bodies; from the shoemaker's bench, who, being unable to make a livelihood at cobbling shoes believed their brains better adapted to cobble men's bodies; from physicians' widows who took to Homœopathy as a duck does to water, though with far less than natural fitness; and from many other unqualified classes of Society." The difference, in this respect, between America and India is, that in the latter country the early stage is far from showing any signs of coming to an end, and that the former country is chiefly responsible for this state of things in the latter.

The opinions are thus classified under headings in the *North American*:

MODIFICATION.

Nov. 16, 1899.

EDITOR NORTH AMERICAN:

The question stated in your letter is imporant, and it is difficult without previous consideration, to reply to you briefly and explicitly as I would wish to do. I have no hesitation in saying, however, that if you will permit me to modify your definition it will meet with my cordial approval. I should substitute for the word "*Homœopathic*" the word "*cultured,*" and then you would have described the educated, scientific and progressive physician of to-day. Although very generally homœopathic physicians *are* broadly educated men, unfortunately all do not complement their knowledge of homœopathic therapeutics by a familiarity with modern medical methods—and, if they did, that in itself would be full and sufficient reason why they should not be limited by a specific designation.

The homœopathic application of drugs is but one phase—important as that may be—of a scientific therapia. It is the secondary or dynamic action—following the primary or physiological: each is important in its own sphere and for its own purpose. But, as illogical and unwarrantable would it be for

physicists who deal with ponderables to separate themselves into a school as opposed to those physicists who deal with molecular activities, as for therapeutics to form into two opposing and non-affiliating groups. It is two sides of the shield, and those who limit their own usefulness—by ignoring half of an essential truth, cannot hope to accomplish the full measure of their possibilities. The "Homœopathic," permitting the designation to be applied to him, gives color to the belief which no statement published in bold type will negative, that his belief and his practice include but one-half of a therapeutic truth.

Unfortunately the attitude of the medical mind for a century past has been so cramped, and polarized that a justifiable feeling existed that to drop a sectarian designation was equivalent to relinquishing a belief and the desire has often been much stronger to maintain an attitude once assumed than to determine the exact truth in all of its relationships. But a higher criticism is as relentlessly exposing the assumptions of medicine—as it already has done in theology and, I believe, that the time has come when our position as medical men should be made to conform with the facts.

Homœopathic physicians, with very few exceptions, everywhere throughout the world in the treatment of their patients, use whatsoever, in their judgment, seem good. They use electricity—serum therapy, the chemistry involved in dietetics, hot or cold baths, lenses before the eyes, and what-not, but they are not therefore "electric" physicians or "dietetic" physicians, or "hydro-therapists," or "eye specialists" (thank the Lord!). Why then "Homœopathic" physicians?

In my judgment the time has arrived when all sectarian designations should be dropped. Now, as never before, the dynamic forces in the world are being investigated. The study of molecular physics is opening a new scientific world: the secondary, the molecular, the homœopathic action of drugs should be studied with a critical accuracy such as it has never yet received; but let us study it as scientists, not as sectarians, and if our work is conducted on the lines which modern science demands, our conclusions will be accepted with the readiness which they merit.

I am now, therefore, prepared to answer your question. An educated physician, to be such, must supplement his knowledge of

general medicine with a knowledge of the secondary, the Homœopathic action of drugs; and a physician, even though he be a Homœopathist, who lacks a knowledge of the physiological action of drugs, is wanting in one of the essentials of broad medical culture.

I hope that I have made myself clear.

You will see that I do not differ from you; I only go a little further.

Very sincerely yours,

F. Park Lewis.

What is a Homœopathic Physician?

Baltimore, *Nov.* 15, 1899.

Editor North American:

Dear Dr. Porter:—Your request that I give you my views in reply to the above question seems a somewhat strange thing at this end of the nineteenth century. A literal answer would be, simply: "A physician who practises Homœopathy;" but like some dictionary definitions, this gives no information.

Many years ago, when a man announced himself to be a *Homœopathic* physician, it was assumed that the prefixed adjective circumscribed his therapeutic rights, excluded all surgical aspirations and limited his usefulness in the community to the application of the principle of similars; and, in fact, there were some of these practitioners who tried to live up to the exceptions of critics, and took keen delight in claiming to be able to cure all "the ills to which flesh is heir" by means of a rarely administered dose of some highly "potentized remedy."

Some of these persons were recruited from the ranks of the ministry, who, having failed in "preaching" to the souls of men, undertook to "practice" upon their bodies. Others were from the shoemaker's bench, who, being unable to make a livelihood at cobbling shoes believed their brains better adapted to cobble men's bodies. Physicians' widows also "took to" Homœopathy "as a duck does to water," and with far less natural fitness; and from many other unqualified classes of society came the early homœopathic physician. Besides these "choice selections," however, there were men well versed in the lore of the schools, both academic and medical, who held aloft "the banner with the strange device," "Homœopathic Physician," and who were many

times so carried away by the remarkable cures wrought after the administration of the infinitesimal dose, that they, too, bowed to the belief of the uneducated and the fanatic, and to them also there were no therapeutic possibilities outside the law of similars; they regarded the rising sun chiefly as an illustration of the universality of the law of similars, and woe be unto the man who should but suggest other therapeutic laws and other means of healing the sick than the great law promulgated by Hahnemann, "let him be *anathema maranatha*," for he is a liar and the truth is not in him.

For the good of the modern physician, most fortunately be it said, there yet remained "the still small voice" of reason in the midst of a minority of men who had cast in their lot with the followers of Hahnemann; and this minority—as is the fashion of minorities—has been the salvation of the majority, the salvation of the great school of homœopathic practitioners of to-day. This minority did not bow the knee to the Baal of fanaticism, but looked straight before it into the truth of things, and saw that Homœopathy had its sphere just as any other law has its sphere. This little handful of men recognized the fact that outside its circle Homœopathy is of no more avail than is any other law outside its sphere, and that the man who tries to drag a law out of its field of application is committing an absurdity. They also recognized the fact that to practice medicine for the best interests of the patient the physician must know not only what to do, but what not to do, and to have such knowledge he must understand all the principles and methods *of* practice in vogue in his day. And, further, they understood the fact there are times when the principle of antipathy must be utilized, when mechanics must be invoked, when chemistry must be consulted, when the germicide (in the old days, sulphur) must be used, and finally, when even the allopathic principle may be called to aid the physician, the homœopathic physician, in relieving conditions which are not within sphere of Homœopathy.

Such wisdom as this was the leaven that leavened the whole lump of the homœopathic profession, and that has hushed the laugh of derision and smoothed out the smile of amusement when the term "Homœopath" was but mentioned; such wisdom as this has given us our modern colleges in which Homœopathy

is taught as *part* of medical education; and such wisdom as this has given us our right to practice medicine as men with equal rights with those of the dominant school of medicine.

Without this breadth of thought and practice what would our school be to-day? And with this breadth of living what is the difference between the dominant school and the Homœopathic school? The difference is simply that we who represent Homœopathy are medical practitioners with a knowledge of the therapeutic possibilities of Homœopathy, added to all other medical knowledge common to the world of medicine, and our confrères of the dominant school are medical practititioners without a knowledge of Homœopathy. In the light of the modern situation, it would appear that a definition of a homœopathic physician is not a very difficult matter. You, sir, I think, have touched the root of the matter in your definition when you say such a person is "one who adds to his knowledge of medicine a special knowledge of homœopathic therapeutics. All that pertains to the great field of medical learning is his by tradition, by inheritance, by right."

Of course, there are those who still hold to the old idea that a man who claims to practice Homœopathy must ignore all other methods of therapeutics; but who really practices Homœopathy exclusively? When one makes such a claim as this he is either ignorant, a fool, or a knave.

Medicine is too large to be circumscribed by a pathy of any kind, and the sooner the medical world in general and the Homœopathic world in particular, recognizes this fact and places its representatives on the broad platform of simple medical knowledge, which is covered by the unqualified term physician, so much the better for the world.

Hoping you may glean some idea of my views from the foregoing, I am, Yours very truly,

ELDRIDGE C. PRICE.

SHALL WE STILL CLAIM TO BE *HOMŒOPATHIC* PHYSICIANS?

NEW YORK, *Nov. 15th,* 1899.

EDITOR NORTH AMERICAN:

In reply to your request for an opinion upon your definition of a homœopathic physician permit me to first propound the following

query. Shall we still claim to be homœopathic physicians? This question seems to me timely because during the closing years of this nineteenth century a few, who have been more or less allied with our school of medicine, and each one of whom seems to feel himself a second Moses ordained to lead the followers of Hahnemann out of the Egyptian darkness of *similia* into the brilliancy of the regular or scientific school of medicine (as they call themselves) have advocated dropping the distinctive name, Homœopathic. In passing let me suggest that these modern Moseses may have become inoculated with the *scientific* (?) treatment of Bergeon's analgas, Brown-Séquard's rejuvenator, etc., etc. Their advocacy of dropping the sectarian name seems to be meeting with about the same fate as did the original Moses and his followers who driven from Sinai in consequence of their worship of the golden calf, were compelled to dwell for forty years in the wilderness.

In answer to my own question I would say that one year ago, after a careful investigation as to the present relations between the two schools of medicine, I offered the following opinion in my presidential address before the Homœopathic Medical Society of the State of New York. "In my opinion the banner of *similia* must continue to wave until the barriers are all broken down. The fight for just recognition will go on until the doors of the Army and Navy and all public institutions are open to our graduates; until membership in their societies is granted to every practitioner of medicine, together with the free discussion of the treatment of disease, without a question as to his school of graduation; and until a chair of Homœopathic therapeutics, filled by a Homœopath, is established in their colleges, and certificates of attendance in homœopathic colleges are accepted in their colleges on the same basis as those of their own faith. Then, and not until then, will schools of medicine cease to exist and the medical profession live in love and harmony. I regret to say that this Utopian period seems to me as far distant as ever."

If as honest men we believe in Homœopathy, is it not our duty to maintain our distinctive title until its principles are recognized and admitted by all schools of medicine? Is it not a fact that the dominant schools of medicine have neglected and

refused to *honestly* investigate our doctrines while we as a school read, teach, and practice "all that pertains to the great field of medical learning."

The learned, progressive physician is the one who recognizes and grasps *all* that pertains to medicine. We then can claim to be the scientific physician of to-day, while our old-school friends not accepting *all* that pertains to the great field of medical learning are not the educated scientific physician of to-day. Our allopathic brethren have always tried to limit us to the single and minimum dose, but we have never accepted their limitation of our duty as physicians.

We believe the Institute as the representative organization of our school has done right in officially adopting Dr. Porter's definition of a Homœopathic physician. It should have long ago placed itself on record in this clear, incisive manner, for by its publishing to the world its interpretation of the rights and privileges of its members it will serve to contradict the claims of our enemies that we do not adopt all therapeutical methods.

I am sure the discussion on Dr. Porter's definition will prove an interesting one, and I would like to see a similar discussion upon my question, "Shall we still claim to be *Homœopathic* physicians?"

Very sincerely yours,

A. B. Norton.

No Restraint.

Washington, D. C.

Editor North American:

If you will permit me to quote from my address delivered at the opening of the fourth session of the Southern Homœopathic Medical College, my idea of a Homœopathic Physician, will, I think, be clearly set forth.

A physician is one skilled in Physic or the Art of Healing. A true physician is one who, by reason of heaven-born instincts, loves his fellow-man and venerates nature in all her manifestations which relate to the highest expression of development, man. By reason of this love he is impelled to devote his life, first to the study of his kind, then to the study of such resources of nature as may be applied to the relief of suffering, the reduction of the power of disease-producing agents and the prolonging

of the usefulness of individual lives. Having attained this knowledge he must, of necessity, give the benefit to others regardless of self-sacrifice or ultimate results.

In the opinion of the speaker, the Homœopathic physician is one who recognizes that the universe in all its parts is the result of one thought, one purpose, one command, and that the highest expression of power of knowledge and of wisdom, is law. In addition to his study of such phenomena of nature as pertain to the normal or abnormal growth, development and life of the animal, in a broad sense he is an anxious enquirer after the laws governing such manifestation as he meets with; and, when he comes to the practice of his profession under the title of physician, he naturally looks for a law as his guide in the treatment of the sick, and for a test in accordance with which he can judge the quality of whatever is offered to him as a means for the attainment of his object. The Homœopathic physician is one who recognizes such a law in the aphorism first spoken of by Hippocrates, and rediscovered and elucidated by Hahnemann. He not only believes in this, but *uses* it in his application of the therapeutic force present in all substances, organic or inorganic, as there is no ailment permitted by nature for which she does not furnish a remedy—it has been said two remedies.

In other words, the Homœopathic physician is one who, by reason of desire, ambition, unselfish and philanthrophic motives, is impelled not only to adopt the medical profession as the aim of his life but who is satisfied to recognize in himself only one of the forces of nature, with a possibility of the greatest achievements by working under the law. If you will pardon me I will go still further, and say, that, in addition to the above, the school is confined to those to whom, whether consciously or unconsciously, there has been vouchsafed a knowledge of this law of therapeutics which, so far as therapeutic force is concerned, is universal. The Homœopathic physician, therefore, is one who must be equal in every respect to every requirement of any one entitled to the title of physician, and in addition is held responsible to himself and to God for such knowledge as he can obtain by reason of the light thrown upon his work by Hahnemann's law. His master said: "When we have to deal with an art whose end is the saving of human life, any neglect to

make ourselves thorough masters of it becomes a crime." The objection has been made that the school is limited in its work by reason of this, which some have termed "dogma" but

"Law does not put the least restraint
Upon our freedom, but maintain't;
Or if it does, 'tis for our good,
To give us freer latitude.

Sincerely yours,

J. B. Gregg Custis.

Carries Conviction.

Buffalo, *Nov.* 27, 1899.

Dear Dr. Porter:

I learn that some persons question the correctness of your definition of Homœopathic physician "as one who adds to his knowledge of medicine a special knowledge of Homœopathic therapeutics."

The above definition is so clear, concise and comprehensive that it will not admit any ambiguity. It implies that the person referred to obtained a knowledge of the science of medicine; that he is a *Regular*, according to Dr. Dowling's definition; and, moreover, that he has obtained a practical "knowledge of homœopathic therapeutics."

He may acquire his knowledge of the science of medicine in any school qualified to teach it, but homœopathic therapeutics is unfortunately taught in homœopathic colleges only. But why multiply words on a sentence that so classically expresses that idea it was intended to convey? Surely in that sentence there can be no just cause for adverse criticism even by the most rigid Homœopath. Now let us examine the last sentence; "all that pertains to the great field of medical learning is his by tradition, by inheritance, by right." Can any intelligent investigating homœopathic physician doubt the truth of this assertion? How can he remain a member of a liberal profession that demands the greatest mental culture and research and at the same time deny himself any medical knowledge that may possibly be allowed to him "by tradition, by inheritance, or by right?" The Homœopathic physician who does not claim all these is unjust to himself and to those whom he serves. While he is using all means for adding to his store of medical lore, his "special know-

ledge of Homœopathic therapeutics" will always keep him true to Homœopathy. Doctor, your "*definition*" carries conviction so positively that it requires no defence.

A. R. WRIGHT.

NO LIMITATION.

PITTSBURG, *Dec.* 14, 1899.

DEAR DR. PORTER:—Your letter, asking to have my views on the definition of a Homœopathic physician, was duly received.

While I feel very much flattered that you desire this opinion, I do not think I can improve on that which you have already given. It might enlarge the scope of your excellent definition somewhat to introduce the word "general." This would make it read "I define a Homœopathic physician as one who adds to his knowledge of *general* medicine a special knowledge of Homœopathic therapeutics." This is simply a plain forceful statement of fact.

It is, however, absurd for any man or class of practitioners to attempt to limit the rights, privileges or qualifications of another class of practitioners, especially the class of qualified physician which compose the Homœopathic school. We do not in the least overstate the case when we claim that as a body of medical men Homœopathists are known for their fair treatment of other schools of practice, are thoroughly high-toned, ethical, and have stood for higher medical education always and with practical success.

While it is true, therefore, that Homœopathic practitioners have every right to make use of every means successfully employed against disease, they nevertheless should not lightly value the incomparable system of therapeutics based on the famous generalizations of Samuel Hahnemann. There *is* such a thing as "selling one's birthright for a mess of pottage."

With best wishes for a Happy New Year, believe me,

Fraternally yours,

J. H. MCCLELLAND.

—*North American Journal of Homœopathy*, Jan. 1900.

REVIEW.

सिद्धान्त दर्पणः महामहोपाध्याय सामन्त श्रीमच्चन्द्रशेखर सिंहेन विरचितः कटक राजकीय-पाठशालायां विज्ञानाध्यापकेन, एम्, ए, इत्युपाधिधारिणा श्रीयोगेशचन्द्र रायेन सम्पादितः कलिकाता राजधान्यां इण्डियान डिपजिटरी नामक पुस्तकालयात् प्रकाशितः। १८९९ शाके।

Siddhánta-Darpana. A Treatise on Astronomy. By Mahamahopadhyaya Samanta Śri Chandra-Śekhara Simha. Edited with an Introduction By Joges Chandra Ráy, M.A., Professor of Physical Science, Cuttack College. Calcutta, 1897.

We make no apology in noticing this remarkable work. The sun and the moon have the most potent influence on Life in our planet. Indeed, without the heat and light derived from the former Life could not have come into being. No wonder that the luminary should have been looked upon as "the god of this world," and should still be worshipped as such by an important section of mankind. The importance of the lesser light, though not so great, is not inconsiderable, both in health and disease. That the other planets of the solar system do exert some influence on the physical phenomena of this globe there cannot be the least doubt, and if so we may without hesitation believe that they must exert some influence on our vitality also. As for the remote stars, if it is true that they are members of a harmonious cosmos, of which our system, vast as it is, forms but a microscopic speck compared with the vastness of the Universe, then we must admit that their influence cannot but be something, though yet undemonstrable. Astronomy, therefore, should be, as in early ages it used to be, recognized as an auxiliary science to medicine. We are far from believing that all that astrology has ascribed to the planets and the stars are true. But we maintain that the subject should be investigated in the spirit of modern science, and we have no doubt that astronomy from a medical point of view is destined to have a place as a branch of human knowledge.

We do not, however, notice this book as in any way tending or helping towards that desirable end. We notice it as one instance, out of many, of the pursuit of knowledge under difficulties which may well be said to be insuperable. We notice it to show what in our heart of hearts we believe and have never been tired of repeating that the intellectual life of old India, has not yet died out and may be revived for the benefit of India and of the world. It was with this object that the Indian Association for the Cultivation of Science was founded and it is a matter of no small regret that our countrymen should not have awakened to the importance of the institution, though it has been in working

existence for a quarter of a century, in the course of which time tiny Japan has, through science cultivation, risen to the rank of an advanced civilized country.

The author of the Treatise on Astronomy is a remarkable man. He is, as we learn from the *Introduction*, a prince by birth, but instead of following the general course of princely life in our country—in the pursuit of pleasure, he found pleasure in the pursuit of a branch of knowledge, difficult in proportion to its grandeur and importance. Taught by an uncle a little of astrology at the early age of ten, "an extraordinary desire to test for himself the position of the stars as they changed night after night" led him to "star-gazing which developed into the habit of a really fruitful study of astronomy." At the age of fifteen "he was surprized to find that neither the stars appear on the horizon at the right moment, nor could the planets be seen at their right places." With a few primitive instruments of his own device and construction for measuring time and angular distance, he went on observing the heavens, the results of which are embodied in the Treatise before us, which, we are told, was completed in six years between the ages of twenty-three and thirty.

We are glad to see that two such Journals of Science as *Knowledge* and *Nature* have borne testimony to the value of the work. The former has written: "Of all the numerous works on astronomy that have been published within the last few years, this (Siddhanta Darpana) is by far the most extraordinary, and in some respects the most instructive. It is written in Sanskrit by a Hindu of good family of Khandapara in Orissa, and is a complete system of astronomy founded upon naked eye observations alone, and these made for the most part with instruments devised and constructed by the writer himself.....Chandrasekhara has re-determined the elements of the old Siddhantas, but has rigorously confined himself to the ancient methods, his principal instrument of observation being a tangent-staff, devised by himself, of a thin rod of wood twenty-four digits long, with a cross-piece at right angles to it. With these rude means he has obtained an astonishing degree of accuracy; his values of the inclinations of the orbits of the nearest planets are correct to the nearest minute in almost every instance. The ephemerides computed from his elements are seldom more than a few minutes of arc in error, while the Bengali Almanac may be in error as much as four degrees.....But the work is of importance and interest to us Westerns also. It demonstrates the degree of accuracy which was possible in astronomical observation before the invention of the telescope, and it enables us to watch, as it were, one of the astronomers of hoary, forgotten antiquity actually at his work before us to-day."

Nature has said: "We get some notion of the success that attended the work, and of how much it is in one man's power to accomplish, if we examine the differences between the values he assigns to some of the constants of astronomy and those in use with ourselves. The error in the sidereal period of the sun is 206 seconds; of the moon, 1 second; Mercury, 79 seconds; Venus, about 2 minutes; Mars, 9 minutes; Jupiter an hour; and Saturn, rather more than half a day. The accuracy with which he determined the inclination of the planets to the ecliptic is still more remarkable. Mercury offers the largest error, and that is only about two minutes. In the case of the solar orbit the greatest equation to the centre is only 14 seconds in error. In the Lunar theory, the revolution of the node has been concluded with an error of about 5½ days, less than the thousandth part of the whole period; while he has independently detected and assigned very approximate values to the evection, the variation, and the annual equation."

The value of the work may be further understood from the following facts given by Prof. Ráy: "Some twenty-three years ago, a meeting of learned Pandits and Hindu astronomers was called at Puri to select an almanac according to which the numerous daily rites of worship were to be conducted in the temple. The meeting decided in favour of the almanac computed after this work. One of Chandra-Sekhara's pupils has been computing an almanac every year, which is used not only at Puri but throughout the greater part of Orissa. Another pupil of his publishes a Bengali almanac which has a by no means insignificant sale. Thus Chandra-Sekhara has already gained a foot hold in Hindu Society, and has inaugurated silently but effectually an advance upon the current almanacs. At any rate, he has silenced all opponents, and has made the question of correction possible in the near future."

Prof. Ráy's comparison of Chandra-Sekhara to Tycho Brahé is striking and happy. Both came of a noble family; both received their education from their uncles, in a clasical language other their vernacular; both were drawn to astronomy by a natural bent. "The European Tycho had Copernicus before him and the long ascendancy of the Almagest was coming to a close. Chandra-Sekhara's Almagest was Suryya Siddhanta, and his Copernicus was Bhaskara. Both Tycho and Chandra-Sekhara detected at an early age discrepancies between observation and calculation. Tycho held and Chandra-Sekhara still holds the same views about the solar system....Both declined to accept the new theory on almost precisely the same grounds." *Nature*, speaking approvingly of this comparison, looks upon Chandra-Sekhara as "a greater than Tycho, for without the same assist-

ance, without the encouragement of kings and the applause of his fellows, he has advanced his favorite science as effectually as did the Danish astronomer." This is a compliment of which we Indians ought to be proud.

We fully believe with Prof. Ráy that if such a man had had the advantage of an observatory equipped with modern instruments of precision, he would have enriched science with his assiduous labor and valuable observations, leading to discoveries which would have brought glory to India. As Prof. Ráy has well said:—"It is singular to find a man born and brought up in the recesses of the hills of Orissa, far removed from all educational activity and the influence of imported Western civilization, silently threading his way into such a difficult science as Mathematics. It is an unique experience in the department of national development to find a man really striving after knowledge for its own sake, under difficulties whose magnitude is no less startling than the boldness of his attempt."

We hope, we have given, however imperfectly, some idea of the remarkable man, the author of the Siddhanta Darpana. A word now about the Editor. Babu Joges Chandra Ráy is known as the Professor of Physical Science in Ravenshaw College, Katak, who has written several elementary works on science, of which the last is, we believe, a *Primer of Physiography*, in all of which he has displayed intimate acquaintance with the subjects treated. The Introduction to the present work is an exceedingly able production, and we would recommend our readers to peruse it in order that they may not only have a better idea of the Uryah astronomer, but may also have an idea of the capacity for research and a mastery of the details of mathematical astronomy which Prof. Ráy has displayed.

It is men like Chandra-Sekhara and Joges Chandra Ráy whom the country ought to encourage and help. Chandra-Sekhara is now an old man. He has done work which has brought honor to his country. He has earned his rest. But "poverty has pinched him in his old age and has compelled him to incur a large debt." Can we not do something to relieve him? Joges Chandra is a young man, full of promise. We are confident that with his enthusiasm for science, his aptitude for scientific investigation, his love of his country, and with better opportunities than he has in an obscure college of an obscure corner of Bengal, he would do a great deal more than he has done, perhaps make some discoveries, and the country would be the better and the richer for it. Is it not a pity that the Science Association has not funds enough to utilize the services of such a man? How long must we wait before we can turn indigenous talent that surely exists to profitable account?

EDITOR'S NOTES.

Absence of Fibula.

Taylor H. L. (*Pediatrics* viii., p. 297, October 1st, 1899), reports the case of a boy, 12 years of age, with absence of the left fibula. The total shortening of the left leg was five inches; there was good use of the hip and knee, but the foot was stiff and everted, and the fourth and fifth toes with their metatarsal bones were entirely wanting. The shortening of the leg was mostly below the knee. There was not much to be done surgically except to correct the position of the foot and the bowing of the tibia, probably best accomplished by an osteotomy of the tibia above the ankle.—*Brit. Med. Journ.*, January 20, 1900.

Anomalies of First Rib.

D'Ajutolo, in a communication read before the Academy of Science in Bologna (April 26th 1899), records 8 cases of anomalous joints in the cartilages of the first rib. The joints in question were truly diarthrodial, and occurred for the most part in the centre of the cartilage. Out of 6 cases where the sex was noted, all were found to be male. The joints had true articular cavities containing synovial fluid. Pulmonary phthisis was noted in one case, but this was probably only a casual association. There was no history of fracture or injury. Probably the malformation is due to some defect in development through which the nuclei (perhaps two) which originally form the costal cartilage of the first rib remain separated from each other or from the neighbouring parts (sternum or rib). The paper is illustrated by lithographs of the anomalous joints.—*Brit. Med. Journ.*, January 20, 1900.

Implantation of Ureter in Bladder.

Boari (*Il Policlinico*, July 15th, 1899) continues his account of the above operation. He has collected 31 cases bearing on the subject, and the technique of the operation is illustrated by woodcuts. The ureter is implanted into the bladder (preferably near the top) by means of a button (devised by Boari) which may be extracted later through the dilated urethra. In case the ureter is damaged too high up to easily stretch to the bladder, the author suggests the dissection of a limb from the bladder and formation of a fresh canal round a sound kept in permanence. If this cannot be done the ureter should be implanted into the intestine before having recourse to nephrectomy. The operation of selection is, however, uretero-cysto-neostomia (the name given by the author to this implantation of the ureter in the bladder). The operation may be performed extra-peritoneally or intra-peritoneally, but in any case the point of implantation should be extra-peritoneal.—*Brit. Med. Journ.*, Jan. 27, 1900.

Specific Weight of the Grey and White Matter of the Brain.

'Agostini (*Rivista Sperim. de Freniatr.*, vol. xxv, f. 2) has made a series of researches on the comparative specific weight of grey and white substance of the brain in various parts, in the healthy and the mentally diseased, and in certain mammals. The specific weight of the brain of the insane is on the average higher than that of the same, and reaches its highest level in the alcoholic and epileptic types of insanity. In the healthy brain the specific gravity increases from before backwards, the occipital lobes being the heaviest. Comparing homonymous parts of the two hemispheres no great variations were noted, but on the whole the specific gravity of the right hemisphere was rather less than that of the left. In the brain of the newborn all these differences are much less marked, and this applies still more to the brain of mammiferæ, so that the author feels this can be used as a test of the degree of evolution of a brain. The greater the difference in specific gravity between different parts of a brain and between the grey and white substance, the more highly evolved the brain. —*Brit. Med. Journ.*, Jan. 27, 1900.

Gastric Syphilis.

Caesaris-Demel (*Arch. per le Sci. Med.*, vol. xxiii, f. 3) reports the case of a man admitted into hospital for gastric ulcer, who died suddenly from intraperitoneal hæmorrhage. *Post mortem* the abdominal cavity was found more or less filled with blood, the stomach, pancreas, and liver adherent, and the remains of a hæmorrhagic sac between the pancreas and stomach. The abdominal hæmorrhage had come from an ulcer which had dissected the coats of the stomach, opened into the old hæmorrhagic sac, and thence burst into the abdominal cavity. The gastric ulcer was 35 mm. by 18 mm., and was situated on the posterior aspect of the stomach. Microscopically it looked like the ordinary round ulcer, but microscopic examination showed that it was the result of breaking-down gumma; around the ulcer there was diffuse gummatous infiltration, and in the arteries typical syphilitic changes. The pancreas was indurated (probably syphilitic) and some of its vessels thrombosed, and there were typical syphilitic scars on the liver. The prelumbar glands were indurated and caseous. As syphilis was not suspected during life, no history of that disease was noted.—*Brit. Med. Journ.*, January 27, 1900.

Perforation of Stomach in an Infant 7 weeks Old.

T. M. Rotch (*Amer. Journ. Med. Sci.*, cxviii, p. 442, October 1899) relates the case of a male infant, 7 weeks old, who was brought into hospital with the history that four days previously his abdomen became suddenly distended, and he seemed to be suffering much pain. Pulse 165, temperature 101° F., respiration 35. Peritonitis was diagnosed, and it was decided to open the abdomen at once. This was done, and the whole intestine was examined without discovering

any cause for the peritonitis, so the abdomen was irrigated and the wound closed. Three days later the infant died, and at the necropsy it was found that the stomach was extensively adherent to the diaphragm along its anterior surface, and at one spot a minute thread was seen coming from the gastric wall. This part of the wall was cut out, hardened, and sectioned; it was then discovered that there was an oblique passage from within outward through the entire thickness of the wall, and in it was a foreign body made up of a bundle of small structureless fibres staining with aniline dyes, but not with hæmatoxylin. It is suggested that this foreign body was possibly a piece of thread which might have been swallowed along with a needle, and the needle might have perforated the wall, leaving the thread behind. It might also have been a case of follicular ulceration into which the thread had worked its way.—*Brit. Med. Journ.*, January 13, 1900.

Professor Virchow on Quacks.

Our Berlin Correspondent writes: Two articles on the New Century by Professor Rudolf Virchow, published in his *Archiv für Pathologie*, have been reprinted separately, with an interesting introduction by the author. The general public, he says, has a violent desire for "something new" in the new century. The medicine of the schools is represented as effete, and "folk-medicine" hailed as the great desideratum of the future. It is interesting, says Virchow, to study the writings of the "nature doctors." Has any one of them, he asks, succeeded in establishing a new principle by which light could be thrown on the nature of disease? The answer must be in the negative. On the contrary, they all walk in the paths first opened up by the medicine of the schools. But they are blindly believed in by the masses, as magicians and "medicine men" were (and are still) believed in by uncultured races. The medical man of our day finds himself in a difficult position through circumstances brought about by the ever-increasing complication of our civilisation. In the struggle for existence he has more and more difficulty in earning his bread honestly. Hence self-advertisement, and hence, too, the sad competition between doctors and quacks, which embitters the life of so many of the profession. But, Virchow concludes, the greatest mistake that can be made is to clamour for State help for legislation against quackery. No penal law would succeed in driving those that seek help from quacks to the consulting rooms of regular practitioners. This can only be hoped for from better education, greater enlightenment of the masses; for superstition is the true source of these misguided practices.—*Brit. Med. Journ.*, Jan. 27, 1900.

Iodine in the Tissues.

P. A. Levene (*Arch. of Neurol. and Psychopathol.*, 1899, No. 3) attempted to find out whether new iodine compounds are actually formed, and, if so, in what tissues after taking pottassium iodide.

Drechsel was the first to find iodine in the keratin of hair after potassium iodide had been taken; and Winternitz found an iodo-fatty substance in the bones of animals given potassium iodide; while Baumann similarly found it present in the thyroid gland (iodothyrine). For the present research the salt was administered to laying hens, 1 gr. daily for a week, and then 2 gr. daily being the quantity given. To test for iodo-proteids the eggs laid by the hens were extracted with cold and hot alcohol, and the residue fused with sodium carbonate and potassium nitrate, and tested for iodine. The alcoholic extract was evaporated and the residue extracted with ether, the ethereal extract then evaporated, and its residue saponified with alcoholic soda and then tested for iodine. Four eggs were taken for each experiment. Only iodides could be detected, but no iodo-fatty compounds were found. The results remained the same for three weeks; then the hens ceased laying for two weeks, when they resumed laying. The eggs collected in the sixth and seventh weeks showed the presence of iodides, but no iodo-proteids. Some of the hens were killed, and the following tissues examined; nervous tissue, glandular tissue, muscular tissue, bones, adipose tissue and skin, gastro-intestinal tract. Iodides were found in nearly all the organs, and in greatest amount in the intestinal tract (probably the part not yet absorbed) and in the bones. No iodo-proteid could be detected in any of the organs. The bones showed an iodo-fatty substance. It should be mentioned that another observer (Holmes) had found iodine combined with the keratin part of the hair, and though Levene examined for it in the nervous tissue, the results were negative.—*Brit. Med. Journ.*, Jan. 27, 1900.

Acute Lead Poisoning.

Zinn (*Berl. klin. Woch.*, 1899, No. 50) reports a case of acute poisoning from a single dose of oxide of lead. A woman, aged 33, six hours after taking in mistake for carbonate of soda a powder containing 15 grams of oxide of lead and 5 grams of sulphate of baryta, was attacked with severe vomiting and abdominal pain, and frequent alterations of hot and cold fits. The mistake was not discovered for fifteen days, during which her symptoms did not greatly vary; constipation was persistent, and not being able to take much food, on account of recurring vomiting, her increasing debility, and abdominal pain, brought her as a patient to the university clinic on July 29th, 1899, three weeks after taking the poison. The urine contained no albumen or sugar, was rich in indican, and by analysis of the quantity discharged in three days was found to contain lead; there was no lead in the fæces. The lead mark was distinct on the gums of the incisors, less so in the back of the mouth, absent from the cheeks. The pulse was 84, regular and tense. No nervous symptoms. After rest in bed, spare diet, and clysters, she was discharged free from her troubles on August 14th. A week later she aborted, and the colic and vomiting returned, and she was re-admitted in a very anæmic condition on August 31st. The lead line was not so marked as before; there was constipation, but no

lead in fæces or urine, and, treated as before, she soon recovered, without any affection of the nervous system. Though she had aborted eight times previously, the symptoms of poisoning recurring on the last occasion led Zinn to attribute some effect in this direction to the lead. He points out that symptoms of acute poisoning, apparently with fever, set in six hours after the ingestion of such an insoluble salt as lead oxide, and that the elimination was so slow that the metal was found in the urine passed twenty-two to twenty-five days afterwards. This is the only acute case among upwards of 200 of lead poisoning seen at Gerhardt's clinic since 1885.—*Brit. Med. Journ.*, January 20, 1900.

Influenza and Politics.

The open-air treatment of tuberculosis is a public recognition of a hitherto somewhat neglected factor in the production of infectious disease. Certain researches have reduced this factor to working terms. For example, it has been shown that if rats and rabbits are kept in cages placed in an atmosphere of sewer gas, they succumb to a dose of the bacillus typhosus, which is powerless to hurt similar animals that have been kept in pure air. A corresponding susceptibility to infection may be induced in rats by allowing them to fatigue themselves in revolving cages, and it is well known that fowls, which are usually immune to anthrax, cease to be so if their feet have been chilled in cold water. How much influence the depressing effect of some of the more recent war news on the community has had in increasing the prevalence of the present epidemic of influenza can only be conjectured; but practical lessons may at any rate be derived from these known experimental facts, leading one to avoid, as far as may be, both for oneself and for others, all causes of depression, whether from over-exertion, or underfeeding, or the undue fear of the malady itself, or inordinate apprehension for the immediate or remote results of the present war. The Palace of Westminster has in each epidemic been a centre of influenza, and it would be interesting to know whether those responsible for the cleansing and ventilation of the chamber itself, as well as of the lobbies, Committee rooms, tea room, library, and so on propose to take any special means to prevent the dissemination of infection when the House of commons meets again. The air of the chamber and its dependent rooms and passages is subjected to various processes which make it dry and at the same time enervating; the difference between the temperature of various parts is often very considerable, owing, as it is asserted, to a division of authority. The matter is well worthy of the consideration of the First Commissioner of Works. The contemplation of the possibility of a House of Commons having to decide on the momentous issues now at stake in South Africa while the majority of its members were suffering from the mental depression produced by influenza is not one which can be contemplated with indifference.—*Brit. Med. Journ.*, Jan. 20, 1900.

Tuberculosis in Cattle.

An extremely interesting report of observations made upon some cattle which had given a decided reaction to the tuberculin test, is furnished to the Canadian Minister of Agriculture by Professor J. G. Adami and Drs. C. F. Martin. The animals had reacted so definitely to the test that it was expected they would afford a valuable object lesson upon the development and the dangers attendant upon the presence of tuberculosis in cattle. A study extending over nine months revealed many instructive points, but not wholly in the way that was anticipated. Although the observations confirmed the generally-accepted view of the infectiveness of the milk and tissues of such animals, they demonstrated that the milk of an animal suffering from extensive tuberculous lesions is by no means continuously infectious. Whilst sometimes few bacilli were present in the milk, and inoculation of even large amounts of this milk into susceptible animals produced tuberculosis, yet without any obvious change in the general condition of the affected cow the number of bacilli in the milk might be temporarily increased greatly, so that the milk then became a most dangerous product. Another most important fact established in this series of observations was that bacilli might appear in the milk of cattle which were free from disease of the udder, or in fact from any evidence of tuberculosis in the mammary gland. The obvious conclusion is that where an animal has reacted to tuberculin the unsterilised milk should never be used for food. In all the ten cows which had reacted distinct evidence of tuberculosis was found on *post mortem* examination seven months later, but in three of them the amount of tuberculosis was extremely small, being confined to latent disease in the peribronchial glands. This fact demonstrates the delicacy of the tuberculin test, and since in these animals repeated injections had been made, there is reason to infer that tuberculin has some curative effect. The report concludes that animals like those above alluded to, presenting no clinical symptoms and free from mammary tuberculosis, are relatively harmless so long as they remain in such a state; but that if tuberculosis is to be stampted out it is imperative that such cattle be either destroyed or segregated, and thus prevented from spreading the disease.—*Brit. Med. Journ.*, Jan. 20, 1900.

Nervous Complications of Measles.

Stow of St. Petersburg records (*Journ. de Méd.*, November 25th, 1899) some unusual complications of measles affecting the nervous system. The first case was that of a child aged 12 months, who was in good health up to the time of contracting measles. The attack itself was not severe, but a month after the beginning there was a considerable amount of weakness and a tremor was noticed, localised at first to the members of the left side and the head, but later it became generalised. It diminished during sleep, and the child was unable to walk or stand. At the end of a month the tremor somewhat decreased, and in four months' time it had almost completely

disappeared, the fingers alone showing any trace. The family history was negative. As regards the tremor there were five to six oscillations a second; it resembled the tremor of paralysis agitans or senility. Measles is not the only infectious disease which may produce tremor, as different observers have noticed it as the result of influenza. The second case was that of a child aged 4 who contracted measles, with marked convulsions, loss of consciousness, and other severe symptoms. These subsided in about two days and the disease ran an ordinary course; but after some days marked mental symptoms appeared, there being much excitation, insomnia, and convulsions, with periods of stupor. After this had lasted about three months, the child was removed in the same condition by its parents and no further history was obtained. The writer quotes other instances—about 10 in all—of severe psychoses supervening after measles. The third case was that of a child, aged 9, who three weeks after measles complained of progressive loss of vision, so that at the end of a week there was merely perception of light. It had been noticed that after the subsidence of measles the patient complained of headache and vomiting. There was also pain in the hands and feet. There was no sugar or albumen in the urine, no casts nor any sign of nephritis, but examination showed the existence in both eyes of a retinitis, presenting all the characters of that met with in renal disease. Notwithstanding a prolonged sojourn in hospital, there was no improvement in the eye condition, and the pains in the limbs also remained. At times hyperesthetic areas were found in different parts of the body.—*Brit. Med. Journ.*, Feb. 3, 1900.

Tumour of the Pituitary Gland.

S. Pechkranz contributes a paper on the above and gives an account of clinical observations made throughout the history of the case from the first onset of symptoms two and a half years before death. The patient, a young man, aged 27 years, suffered at first from troubles which were supposed to be of renal origin and of a uræmic nature, but the absence of œdema and of urinary indications negatived this view. Both syphilis and tuberculosis could also be excluded. He suffered from headache, and this was followed by troubles of vision in the course of which one eye became completely blind while the other was simultaneously affected with hemianopsia. At a slightly later stage there developed a double optic atrophy. The two oculo-motor nerves were next attacked and an almost complete ophthalmoplegia (internal and external) followed. There was no involvement of any other sense, and there was complete freedom from localised paralysis or convulsion. A diagnosis of neoplasm at the base of the brain affecting the optic chiasma was made. The necropsy revealed the following conditions. The pituitary gland was replaced by a large tumour, no part of which was adherent except to a spot at the back of the sella turcica. The tumour was composed of three parts, the chief of which occupied the sella. Prolongations from this passed forwards into the oribital

cavities and its dorsal part projected into the third ventricle between the cerebral peduncles. Small nodules of growth were situated around the margins of the tumour and the whole mass was encapsuled in a tough membrane like the dura mater. There was no remnant of the pituitary gland. The tumour was sarcoma. The cerebral substance in contact with its margins showed a slight degree of local softening, and a portion of the neoplasm itself had undergone softening as the result of a hyaline degeneration of its vessels. In the course of its growth forwards it involved the optic chaisma slightly, more on one side than the other; hence the amaurosis on the one side, combined with hemianopsia on the other side. As the growth continued to increase the involvement of the other optic nerve was complete and hence total blindness resulted. It is interesting to record that the patient showed a moderate degree of hypertrophy of the feet and hands and of the face, the augmentation of volume in these organs producing an appearance like that of acromegaly. The enlargement was practically limited to the soft parts, the bones apparently not suffering enlargement. The patient had a feminine type of skleton and the sexual organs showed insufficient development (hypoplasia). Pechkranz thinks that the patient had a congenital anomaly in the structure of his pituitary body and regards the condition of the skeleton, of the sexual organs, and finally of the hands, face, and feet as associated with the abdominal condition and eventual destruction of the pituitary body.—*Lancet*, Feb. 10, 1900.

Auguste Comte: A Study in Mental Pathology.

Dr. W. W. Ireland contributes to the pages of the *Journal of Mental Science* (January 1900) an interesting study and critique devoted to the mental life and history of Auguste Comte. The mental aberrations of that philosopher were previously made known by his friend and biographer, M. Littré, and more recently by Dr. G. Dumas in three articles filling 87 pages of *Revue Philosophique* (vol. xlv. 1898). Comte was of delicate health and suffered from a weak digestion in youth. At the age of 27 years he married Caroline Massin, a lady subsequently known to have been a person of loose morals, and their domestic life was far from happy. She ultimately quitted his house to live with a lover. Dumas tells us that Comte's wife deceived him, was unfaithful to him, "and made his home-life hard and jangling." Domestic and worldly troubles conspired to bring about a breakdown in the philosopher's mental health. "I have often conceived thoughts of suicide," he subsequently wrote, "and should have probably yielded to them had the bitterness of my domestic life not been neutralised by the increasing consciousness of my social mission." Twice he made attempts to drown himself but was rescued. He plunged into excessive mental work and signed his register of marriage with the words "Brutus Bonaparte" appended to his name. For two years, while suffering from melancholia with suicidal impulses, he was under the treatment of the famous mental physician Esquirol. He suffered much from

sleeplessness, irritability of temper, and repeatedly from "nervous crises," one of which occurred in 1838, another in 1842, and a third in 1845. Two years after his separation from his wife he met and conceived a violent passion for Madame Clotilde de Vaux. His affection was reciprocated, but after a brief courtship the lady died a victim to consumption. In a letter to Madame Comte, from whom he had been separated some time, he recounts the death of this lady who had become "his eternal colleague and his veritable spouse." "This attachment," observes Dr. Ireland, "had brought out the affective and sentimental side of his character ..... and the influence of this passion modified in many respects the character of his speculation. His political philosophy showed a great falling off, which his enemies ridiculed, his more critical admirers deplored, and scarcely any of his disciples entirely followed." For about 20 years he abstained from reading the newspapers and even scientific periodicals. He only read a few favourite poets. Thus while preparing schemes for the salvation of society he would not feel the pulse of the world. He declared that scientific pursuits should be treated as idle waste of time if they could not be proved to have a direct bearing upon the welfare of humanity. "All books were to be destroyed save about 100, and all animals and plants thought useless to man were to be extirpated." Comte, in his later days, was a victim of hallucinations in the course of which he had visions of Clotilde. His thoughts were saturated with a crude mysticism at this time; he set up in his imagination three guardian angels, Madame Clotilde de Vaux, his mother, and a young woman who was his cook. Comte, having suffered from more than one attack of recurrent insanity, remained for the rest of his life thereafter a "neuropath," and died in 1857 at the age of 60 years.—*Lancet*, Feb. 10, 1900.

CLINICAL RECORD.

Foreign.

CASES FROM PRACTICE.

By Dr. C. F. Barker.

Case I. *Melilotus in headache.*—In the treatment of headache, one ought always to look for a cause, and if possible, remove the headache by eliminating the cause. Digestive derangements, uterine displacements, anemia, anomalies of refraction, decayed teeth, defective fillings, ear diseases, etc., all produce headaches. But the search for a cause is not always successful, though the homœopathic remedy often relieves. In the following case the cause was not discovered:

Case. A tall, blonde young woman, aged nineteen, has, for several years, had frequent, severe, nervous, congestive headaches—from two to four per month. These attacks are so severe that she must take to her bed until relieved, a matter of twenty-four hours or so. The pain is mostly in the temples and frontal region. It is a congested, full sensation, the face is flushed, and she feels

stupid and drowsy and sometimes has much nausea. Very trivial things seem to provoke the attacks. Two competent oculists each fitted spectacles, assuring her that the cause would thus be removed. A dentist thought the cause was to be found in the teeth, so he removed and replaced fillings and made repairs. Many drugs and various forms of diet were tried. More out-of-door exercise and less application to study were ordered. None of these gave relief. Melilotus was prescribed. It was given in the 4x dilution and since taking this remedy, now six months, she has had but two attacks and both of these were very mild.

CASE II. *Hydrastis in atonic dyspepsia.*—In digestive disorders of a certain type, it has become my custom to rely very much upon hydrastis, and it seldom fails to give the desired relief. Persons who eat too much, or who take insufficient exercise (and their name is legion), also those who are accustomed to the use of stimulants, all of these, sooner or later, develop atonic dyspepsia. In such cases the liver is sluggish and the bowels are constipated. There is also, quite often, a dull aching pain in the stomach; the tongue is coated, generally yellow, and is flabby in appearance. Whenever I find such symptoms, especially if the dull, uncomfortable feeling in the stomach is relieved temporarily by eating, I feel sure that hydrastis will greatly benefit.

CASE. German gentleman, age fifty-eight; occupation, money lender; height, five feet ten inches; weight, 225 pounds. He takes very little exercise and is a hearty eater. His tongue is broad and flabby and is quite heavily coated; the breath is fetid; the bowels are generally constipated, the complexion sallow and his expression dull and discontented. He tells me that this has been about his usual condition for five years, and that he has taken many kinds of medicine to aid his digestion, but without any permanent relief. He thinks he has been gradually getting worse.

TREATMENT. He was ordered to drink three quarts of pure water daily, but to take very little fluid of any sort at meal time; hydrastis, in three minim doses four times daily, was prescribed, though ordinarily I find the 1x or the 2x quite as satisfactory.

Concerning the internal use of plenty of pure water in such a case, my own idea is this: It is better to thoroughly flush the whole system, thus incidentally washing the stomach quite constantly, than to simply fill and empty the stomach through a tube. Also, it is a well-known fact that many of these patients are not accustomed to the internal use of water as a beverage. Whether it was due to the hydrastis or to the water, this patient experienced the greatest relief almost at once, and the beneficial effects have continued for more than a year. He still continues to use the hydrastis with the greatest satisfaction whenever he deems it best, and tells me that it is the only medicine that has ever given him any permanent relief.

CASE III. *Nitric acid in infantile marasmus.*—The causes of infantile atrophy may be found enumerated in any good text-book of children's diseases. The etiology, pathology, diagnosis and treatment are clearly set forth. It would seem likely then, that in a

given case, one ought not long to be in doubt as to the proper course of treatment. So, theoretically, one would think that if the child dies, the physician can feel that his personal duty has been scientifically performed; and he ought, perhaps, to console himself with the reflection that the child in question was beyond the reach of medical science. Practically, however, one occasionally encounters a case that casts a doubt on such complacency. He then wonders whether, even in apparently hopeless cases, the element needed to effect a cure does not almost always exist, could it only be discovered. The following case, I think, illustrates my meaning.

CASE. A male infant weighing eight pounds was born of healthy parents. At birth, it was plump and apparently normal. At the end of two weeks it weighed only six pounds. It cried very little, slept almost all of the time and did not appear hungry. The mother's milk was rich and plentiful, but the babe grew weaker and either could not, or would not, nurse very much. It appeared old and wrinkled. The mother continued to nurse the child, but two weeks after birth, diluted cream was added as a food, in alteration with the breast milk. The child, however, continued to lose steadily and, at the end of another two weeks, weighed but five pounds. It lay with its eyes closed, but would still swallow, and could be made to temporarily open its eyes if much disturbed.

At this time I had about given up hope, but in casting about for another remedy (silicea and arsenicum and some others had been tried) I decided to try nitric acid. The good effects of this remedy were noticeable in the first two days. The child gradually grew stronger and heavier, and quickly went on to a complete recovery. He is now five years old, and, I am told, is rugged and healthy. The mother continued to nurse him during the first year of his life. The cream was discontinued shortly after the nitric acid was prescribed.

My only reason for selecting this remedy was the great emaciation, and strong suspicion I entertained of hereditary syphilis. The father denied ever having had the disease, but I remembered that some weeks previous to the birth of the child, he had asked me the probable effect of "blood diseases" upon offsprings. It will be interesting to observe the condition of the child's permanent set of teeth.

CASE IV. *Ingluvin in the nausea of pregnancy.*—It has recently been my fortune to relieve two cases of the nausea of pregancy with an agent known as ingluvin. One of these cases was so pronounced it seems worth recording. The patient, two years previously, was under my care for the same complaint, and it was a most intractable

case. Nothing I did or could devise gave any relief, and she miscarried at the sixth month. During the first two months of her next pregnancy, she suffered with constant nausea and distress in the stomach, quite as severe as before. I tried some new remedies, without result, but finally ordered ingluvin, a remedy I had never before prescribed. Immediate improvement followed, and it continued right along. In former experiences with such cases, arsenicum and ipecac have been the remedies that have oftenest produced the best results.

Ingluvin is said to be prepared from the ventriculus callosus gallinaceous (the crop of poultry). If one reflects a moment, he may be excused if he smiles and says to himself. "Why, of course, that ought to digest anything."

THREE CASES VERIFYING TEREBINTH IN RENAL HOMŒOPATHIC THERAPEUTICS. BY E. S. BAILEY, M. D.—My acquaintance with this drug began twenty years ago. The occasion was the presentation of a sailor at the Hahnemann College free clinic. The sailor was a finely proportioned, weather beaten, strong man, but came to the clinic in a bent and humbled attitude and in a voice choking with painful emotion and eyes wet with constant weeping. He had but one real symptom and that was bloody urine; with every micturition bright red blood would pass. The quantity was variable; sometimes it was but a trace and again large quantities would be voided. Prof. Hawkes elicited from him the history of having fallen while on a sailing vessel from quite a distance above to the deck, and though he did not suffer in any particular manner at the time the next voiding of the urine was noted as bloody; and when his ship arrived in Chicago he drifted from one free clinic to another, without relief, until he came to this one. I distinctly remember the man, the prescription of Prof. Hawkes and the after treatment. Prof. Hawkes could find only this one symptom—bloody urine—at times with great tenesmus. Terebinthina 3x, on pellets, five pellets every three hours. The report at the next clinic, the week following, was that his urine ceased to be bloody and the tenesmus gone two days after taking the remedy and it did not return; the patient afterward receiving treatment for rheumatism, which was cured by rhus. With such profound impression on my student mind as the clinic made, I have observed this remedy for years and have frequently prescribed it for the following symptoms which to me are verified over and over and are reliable. Bloody urine, either from kidney or bladder, and probably as valuable if coming from urethra accompanied by severe tenesmus. Tenesmus of the bladder,

especially if accompanied with meteorism and pelvic peritonitis, tympanitis, especially in the iliac region, and violent stitching pain extending along the uterus. Cystitis with aggravations due to getting wet.

Permit me to cite another case, showing how the faith within me led me to a correct prescription and cure of my patient. A winter's night with melting snow on the side-walks and a raw atmosphere, I was then associated in a professional way with Prof. G. A. Hall, the eminent surgeon of that date, a man perhaps forty years of age, a stationary engineer in a down town building had been obliged to stand all day in water in the engine room while repairs to a leaking boiler were being made. While the room was hot the water was cold, and early in the evening the desire to urinate was answered but he soon found himself unable to void even a drop of urine. An hour later strangury seized him. The pain grew rapidly worse. Jumping up from his chair, he rushed out of the door and without hat or coat and with slippers on his feet, he made his way as rapidly as possible across a vacant lot through the slush and arrived at the office with every feature of his face staring as in fright, a picture of despair. He rushed into the reception room and oblivious of the presence of others demanded in the name of humanity immediate attention and proceeded at once to disrobe. His story was told between groans and at the same time he used both hands to press as violently as possible over the bladder. He could not remember to have voided urine during the entire day and thought the tenesmus due to over distention of the bladder. In a short time I had prepared to pass a soft rubber catheter and collect the urine therefrom. A terrible pain seized him as the catheter passed the sphincter into the bladder and he fell over into a condition of collapse, while to my surprise a clear stream of bright red blood was forced through the catheter covering the patient, the examining chair, the carpet for quite a distance, before it was directed into a receptacle. The quantity of blood voided was never known, nor did it afford much relief; and the fears of the patient were doubled when he realized his condition. To my knowledge not a drop of urine was voided except with the blood. The cries and moans of this strong man ring in my ears as I write this recollection. I commenced to give him terebinth 3x internally using the bottle from the desk for my supply, turning a quantity hurriedly into a half glass of hot water and giving two or three teaspoonfuls every ten minutes. I also applied towels taken from hot water to the vesical and lumbar region; later

a liberal quantity of terebinth was used with the hot applications. Relief came in a gradual manner, but it came, and no other remedy was used; the patient returned to his work after three days but it was three months or more before he felt recovered. I attended this patient for some years and never new him to have blood in the urine, except this memorable night.

Permit me to relate one other case by way of clinching the verification of the symptoms of bloody urine and the cure by using terebinthina.

The occasion was in the case of a woman having a uterine fibroid, had a year before had an eighteen pound ovarian tumor removed and was passing through the change of life. The fibroid was held to be responsible for the uterine hemorrages, it being a guess that the climacteric had little to do with the hemorrhages. One night along toward the small hours of morning she wakened suddenly and screamed for help, described her pain as though being scalded internally "like a hot coal of fire" and with great tenesmus. Trying to void the urine a hemorrhage followed, which she and the attending physician who had been hastily summoned, declared was of uterine origin. Old school treatment was followed for ten days, the patient noticing that the blood came after micturition or during the time of, and was not from the uterus. She informed her physician of her discovery, to which he replied that it could not be so. The husband applied to me for help, relating the symptoms, to which I replied, "If you have spirits of turpentine in the house, put five drops in one-third of a glass of hot water, and give the patient a teaspoonful every half hour.

The verification came when the patient reported to me in person, saying: "I knew the hemorrhage came from the bladder because I placed a glass bottle immediately under the urethra and collected it together with the urine as it was voided, and after I fixed and took the terebinth I did not have any blood pass from the bladder. The hemorrhage ceased as soon as I began taking your remedy."

I could relate other cases that to my mind establish over and over again the usefulness of this drug in bladder cases. It is sufficient perhaps to say that tenesmus of the bladder and hemorrhage from the kidneys or bladder suggest to my mind this remedy, provided other characteristic symptoms are wanting. Phosphorus, hamamelis, apis mel. and merc. cor. have been used in cases where the hemorrhage was one of the group of characteristics and given wonderful satisfaction.—*The Clinique*, Dec. 15, 1899.

Gleanings from Contemporary Literature.

PROTRACTED GESTATION.

By JOHN PHILLIPS, M.B., C.M., L.R.C.P. Edin.

The question of the duration of pregnancy being of considerable interest, not only from a medico-legal point of view, but also from that of general practice, I venture to report what I believe to be an authentic case in which it was prolonged to much beyond the usual period.

My patient was a primipara and unmarried. Intercourse was declared to have taken place on one occasion only—Sept. 6th, 1898— the girl's age at that time being only 16 years and four months. Her menstrual periods had occurred at regular intervals and they usually lasted about a week. Her last period had occurred in August, 1898, and had entirely ceased by the 24th of that month, this being the first day on which she considered herself "well," and it was from this date that I calculated the probable duration of pregnancy. In consequence of her missing her next two periods in September and October her aunt with whom she lived took her on Oct. 24th to a medical man in London, to whom the girl confessed, when questioned, that she had had intercourse, and he expressed the opinion that she was most probably pregnant. This proved to be the case and in April of the present year she came under my observation, and I was asked to attend her in her confinement, which I calculated would take place somewhere about May 29th, this being the usual average period of 278 days from the cessation of her last menstrual period (August 24th, 1898), from which I reckoned. Instead, however, of the confinement occurring at the expected time she not only went through the whole of June without a single pain, but labour did not set in until July 13th, on which date the pains began at 6 p.m.—*323 days after the cessation of her last period and 310 days after the date of coitus*, the child being born on the following day at 4-30 p.m. There is not the slightest doubt that no menstrual period occurred subsequently to that in August, as in addition to the girl's own statement her aunt, who always looked after her linen and who consequently always knew when her niece was unwell, declares that there "was not a stain" subsequently to the August period. During the entire pregnancy the girl had excellent health and there were no pains of any description prior to the onset of labour, which was perfectly normal and the presentation of the usual cephalic one. Unfortunately at the time I had no opportunity of having the child (a female) weighed as it was sent away to be nursed almost immediately after its birth (within three hours), but although well proportioned and of good size it did not seem at all unusually large.

The late Dr. Matthews Duncan in his book, "Fecundity, Fertility, Sterility, and Allied Topics" (p. 348), is inclined to disbelieve in any case of supposed protracted gestation unless the size and weight of the child are

above the average, considering that increased growth must follow lengthened gestation, but this cannot be taken as proved and, as Dr. Playfair points out, even if it be admitted the fœtus may have been originally small, so that at the end of the protracted gestation it may be of no more than the average weight and there is certainly no reason to believe that the fœtus must necessarily be large simply because it has been retained longer than usual in the uterus.

This case, then, which lasted 323 days after the cessation of menstruation, is thus a parallel to the four instances reported by Simpson in which, reckoning from the same period, gestation was prolonged to 319, 324, 332, and 336 days respectively, and other instances as curious may be found scattered through obstetric literature. The case, however, becomes more exceptional and interesting when we consider the prolonged interval which elapsed between the date of actual intercourse and the onset of labour—310 days. Of the 46 cases reported by Dr. Mathews Duncan, who probably devoted more consideration to this subject than any other writer has done, he calculates an average interval between what he calls insemination (intercourse) and parturition of 275 days and other authors give other estimates —from 271 to 276 days. The longest of the series of cases recorded by Dr. James Reid in which he reckoned from a single coitus was 293 days and this he believed to be the extreme limit. Lieshman, however, mentions one in which the interval was 295 days and Hedrich has recorded the case of a primipara who was delivered on the three hundred and ninth day after intercourse, whilst of those cases in which the duration of gestation has been determined by the death or departure of the husband Sir James Simpson reports one lasting 313 days and Dr. Hewitt another lasting 308 days. In more recent times Mr. Woolett reports the case of a girl, 16 years of age, in whom gestation lasted 315 days from the date of coitus. In this case, however, labour pains occurred on the two hundred and eightieth day but passed off again, and another observer—Dr. R. McBride—has reported another case in which there was an interval of 296 days between a single intercourse and the occurrence of labour. It will thus be seen that the case of 310 days which I report is somewhat exceptional, and cases like these are of considerable importance from a medico-legal point of view.

In cases of contested legitimacy the English law and also the American, leaves the subject of the duration of pregnancy an open question, each case being decided on its individual merits, but in France and also in Austria a possible limit of 300 days is allowed, and this is extended to 302 days in Prussia.

There are still many practitioners who disbelieve in cases of prolonged gestation simply because they have not met with them in their own practice. There can, however, be little doubt not only that they occur, but that they probably do so with more frequency than is generally supposed.—*Lancet*, Jan. 13, 1900.

FETISHISM IN SURGERY.

By E. STANMORE BISHOP, F.R.C.S. Eng.,
Honorary Surgeon, Ancoats Hospital, Manchester.

If I were asked to define what is meant by this term, I should, I believe, best express it by "a tendency to mistake the relative value of the various objects sought to be obtained or the various facts which go to bring about the result desired"—an error in mental perspective, in short. And such an error may either be committed by elevating a factor of relatively little importance to an unduly high level or by unconsciously depreciating or ignoring one of primary rank. The same attitude of mind is usually responsible for both. Of course, the word, as ordinarily employed, denotes the elevation of a totally unimportant and unworthy thing to a position of honour, admiration, and even worship; but amongst educated and scientific men fetishism to this extent is absurdly impossible. Such finer shades of it as I have indicated, however, are not only possible but occur with some frequency.

Every teacher of practical surgery must have encountered the student who has a profound respect for some particular author. Any attempt to demonstrate to such a student a proceeding which has not been described in so many words by his dominating genius is rejected because Erichsen, Heath, or Jacobson, whoever it may be, has not included it in his work. "Erichsen doesn't say so," is to him a sufficient answer. No power on earth can make such a man work his own brain. He accepts and registers as final the teaching of the particular writer whose text-book is accepted at the medical school of which he is a member, and no argument has any effect on him. His fetish is the written word of the teacher whom he was very properly taught to respect and believe in during his studentship.

Not very far distant from this condition of mind is that of the man who devotes himself almost fanatically to the writings of a particular nation. Not long since it was the fashion always to quote German authors. The man who had at his tongue's end and could always quote glibly Martin of Berlin, Dührssen, Döderlein, Zweifel, Virchow, Koch, &c., with the magic references of *Berliner Klinische Wochenschrift, Sammlung Klinischer Vorträge, Centralblatt für Chirurgie*, &c., was always certain of an awed, respectful hearing from this class of mind, who accepted almost blindly any dictum which emanated from Germany. The thing must be final, for was it not written in somebody's *Archiv?* His fetish also was plain.

Little different is the case of the man who prides himself on being "up to date." Is any method of surgical procedure praised or advocated? That is not the latest, and *therefore* not the best. Some man in Japan or in some unheard-of village in Russia has "brought out" a later plan. What is the date of the former? 1856. Dear! dear! perfectly obsolete, of course. So-and-so of Platigorsk wrote a long article only last week in which the new method is described and above all things we must be "up to date" and

swear by the latter, until in its turn it is displaced by another and still later method.

Now it will be noted that in all these cases there is an element which deserves respect, which is absolutely good in itself, and which only becomes wrong and misleading because it is dislocated, so to speak, from its proper place, and elevated to an undue prominence in the mind. Respect for the dicta of a teacher of the professional and mental rank of the names mentioned is most praiseworthy and to be encouraged. Respect for the painstaking, thorough, and usually complete work of the Germans has been well earned by them and should be ungrudgingly given. A desire to be acquainted with all that has appeared on our own special subject and not to be left behind and to become fossilised is absolutely necessary for all of us who desire to excel in our work. Accepted in due relationship to other and more important points, these are no hindrances, they are great helps. Elevated unduly in importance they become fetishes.

But fetishism is possible in minds otherwise constituted than those already considered. The modern surgeon is specially liable, it would seem, to fetishism in two directions, and the first is in that of undue importance attached to certain details in technique. No one who passed through it can have forgotten the controversy that raged between surgeons who used antiseptics and the "full Listerian method," as it was termed, and those who did not: the airs of impeccability that the first class—I was one of them—put on, and the sneers of the gentlemen who, in the elegant words of one writer in an American journal, "never bothered themselves about bacteria or bugs of any kind." Did the former lose a patient? the death was treated as of comparatively no importance—except as spoiling statistics—so long as the primary requisites had been complied with and the operation had been carried out under "complete antiseptic precautions." Some surgeons went even further, and not content with elevating the whole principle, almost worshipped some detail of it. A striking instance of this might be seen in the spray producer—that magnificent and imposing structure in brass, glass, and nickel-plate, which at one time was such a prominent feature in our operating theatres. Was the "spray" used? was the one essential question. If so, all was done that human ingenuity or skill could suggest, and if the patient was so wrong-headed as to die after that, well, it was his own fault, and no human power could have saved him. Now that the spray is relegated to the shelf does not the same tendency remain? and are we not tempted unduly to consider the importance of corrosive sublimate, hot air, steam under pressure, mercuric iodide, iodoform gauze, and a hundred other things according to the school in which we happen to have been taught, making these things principals, as it were, instead of looking upon them as simply means towards the one true end of all our work—the restoration to health of our patients? Some such feeling as this probably explains the opposition to Listerism of the late Sir William Savory and Mr. Lawson Tait, not to mention certain living writers.

The second direction is one of late date, but it bids fair unless checked to

blossom into a fetish of great dimensions. In the old days, before our time, rapidity in operating was a point of first-class importance. When a patient was acutely conscious of every step in any operation he was the successful surgeon who could perform his work with lightning-like celerity. Every second of the awful bodily and mental anguish which could be spared to the unhappy victim was immense gain to his chances of life. But it must be remembered that operations in those days were almost limited to amputations. Take down any work, Chelius or Ambroise Paré, for instance, and turn up abdominal, gynæcological, or cranial surgery. The two former will be found to be almost non-existent, as we know them to-day, and the latter reduced to trephining, an operation usually performed under nature's own merciful oblivion. Every step of an amputation was known and had been practised many times beforehand. There was no careful separation of adhesions as in modern pelvic surgery, which process has frequently to be done before the surgeon can even be sure what it is he has to deal with or can decide what particular operative procedure has to be carried out; the position, size, and condition of all vessels were matters which had become commonplaces; there was scarcely a possibility of the surgeon being for one moment in doubt. How different in every way from the removal of an old pyosalpinx, buried in adhesions, with the imminent danger of rupture of the sac itself during the process, or the possible division of a ureter, or the perforation of an adherent loop of intestine. Once anæsthesia was introduced with its splendid elimination of mental and physical suffering, procedures never before possible came within the range of practicability, and the race with time became no longer an absolute necessity. It sank to the level of a factor of the third grade, and security with perfection in final results rose, as they ought to do, to the level of the second—the main end being now, as always, the recovery of the patient. But quite lately, as I have said, a most determined effort from a quarter which commands respect has been made to raise speed again to the level it originally occupied. Once more the skill of the surgeon, and, indeed, his reputation, is to be measured by the chronometer, and with the aid of the latest scientific—and popular—invention, the kinematograph, the powers of various men are to be judged of by the rapidity of their work. Not only so, but these records are to be handed down to posterity, and the operator is to be made to feel that he is not merely pitted against his contemporaries, but against all the surgeons of the future in this and all other countries. May it not follow as a matter of course that we shall vie with one another as to the rate at which we can open the abdomen, tear out the tumour, and sew all up again before the accusing film can have run half its course? Unfortunately the kinematograph will not record the after-condition of the patient, or the deaths which will inevitably follow from secondary or consecutive hæmorrhage, sepsis, or the miseries due to new adhesions, fæcal fistula, and the like. Rapidity in operative work is to be made a fetish, to which we shall all, for a time at least, have to bow.

All, I say, but that is not so. Level-headed surgeons—and they are the

majority—will, I am certain, refuse. Rapidity, like all other things which carry with them this possibility of fetishism, is a good thing—a thing to be aimed at in its due proportion. Its opposite—dawdling or fumbling—is most strongly to be avoided, to be reprobated. But rapidity is good only when used in its true and fitting relation to other things. Always the main end to be kept in view is the sound and perfect restoration to health of the patient; and we must get that, or as near to that as possible, by the use of all these means in their due relation to one another.

The risks of undue rapidity—of racing—are many. Consecutive hæmorrhage is one of the most likely to occur. I watched carefully the reproduction of a hysterectomy by kinematograph at Edinburgh, and one of the things which struck me most forcibly was the extraordinary behaviour of the vessels in the abdominal wall. One stroke of the operator's knife and the abdominal cavity was open, one wipe down by the assisitant with a piece of lint and all bleeding from the cut edges ceased. To go no further, what became of those vessels? Not a single pressure forceps was placed, not a vessel was ligatured, but there was no further bleeding—from those parts at least. I appeal to any surgeon who has ever done abdominal section if this is credible? If all parts are to be treated in the same way deaths from peritonitis afterwards are certain to be many. Clark and Waterhouse have shown that the peritoneum can deal with bacteria to a great extent if it is clean, but if any appreciable clots of blood are left behind or find later entrance peritonitis is promptly set up by the septic changes induced in such clots, where bacteria find a fitting breeding ground and immunity from rapid absorption and phagocytosis. Vessels treated in this lightning fashion will certainly bleed afresh when the force of the circulation recovers itself after the patient has returned to bed, when all is closed up and the mischief can progress unseen until it is too late to remedy. Will the kinematograph be re-introduced into the sick room and record for us the gasping restless tossing of the exsanguine victim who is bleeding to death into her own abdominal cavity; or the hurried, anxious—often, alas! useless—groping of the surgeon with imperfect aid and light for the vessel now retracted into the subperitoneal tissues, or hidden under constantly increasing clot—that vessel which might so easily have been safely and finally secured in the morning had not the surgeon been racing against time in his devotion to the latest fetish of all—rapidity.

No protest can, I conceive, be too forcible against this new development of our art. Quick, nervous, prompt work is most desirable, but as all good things are liable to abuse, and such abuse is detestable in proportion to the very excellence of the thing abused, so racing in operative work is certain to entail results which will be as deplorable as those produced by careful rapidity are admirable. In surgery, as in everything else, a due perception of the proper perspective of things is absolutely necessary to produce perfect work.—*Lancet*, Feb. 10, 1900.

A CLINICAL LECTURE ON SLEEPLESSNESS.

Delivered at the Medical Graduates' College and Polyclin on Jan. 17th, 1900.

By SIR WILLIAM H. BROADBENT, Bart., M.D., F.R.C.P. Lond, F.R.S.,

Physician Extraordinary to H. M. the Queen; physician in ordinary to H. R. H. the Prince of Wales; consulting physician to St. Mary's Hospital.

Gentlemen,—Sleeplessness is one of the torments of our age and generation and we are daily called upon to treat it, but I could not well bring cases before you for demonstration. While, however, I have no actual patients to present and shall not even read notes of cases, it is incumbent on me to treat sleeplessness from a clinical point of view. I am fortunately, therefore, under no necessity to discuss the various theories of sleep, nor have I to entertain you with speculations on the neuron or as to the behaviour of dendrons during sleep such as those which now seem to be the inevitable introduction to all questions in which the nervous system is concerned—to attempt to explain, in effect, the *ignotum per ignotius*, which has a perennial fascination.

One word, however, must be said as to difference in the vascular condition of the cortex of the hemisphere in the sleeping and the waking state. According to old experiments the cerebral cortex is in a condition of anæmia during sleep, and it has been assumed that the blood is shut off by contraction of the arterioles, but we have been assured by Dr. Leonard Hill that the vaso-motor regulation of the blood-supply does not extend to the brain, that no nerves are distributed to the cerebral blood-vessels, and that it has been demonstrated by experiment that the blood-pressure within the cranium is entirely controlled by the ebb and flow of the blood in the splanchnic area. On the other hand, my friend Dr. Alexander Morison shows beautiful preparations of arteries from the pia mater in which these vaso-motor nerves are conspicuously visible, and independently of this direct evidence, one was disposed to wonder why these vessels had muscular walls if there were no nerve-supply. It seems to me that the only possible explanation of many of the disturbances of the functions of the brain from peripheral irritation of various kinds is a reflex influence of the cerebral circulation.

In this lecture I propose to limit myself to the consideration of sleeplessness where it constitutes the special complaint on account of which the patient seeks advice. To speak of loss of sleep where it is only one among many symptoms of disease of brain, lungs, or heart, or one of the effects of fever or other acute affection, would require two or three lectures.

Sleep consists essentially of a suspension of the functions of the higher centres of sensation, or rather perception, involving inaction of the corresponding motor centre. The reflex action of the cord persists as well as the vital reflexes concerned in respiration and the action of the heart. Reflexes also survive in which there is a considerable degree of purposive coördination; the extremities will be withdrawn from a source of irritation and we

turn over in bed and may adjust bedclothes without waking. The Indian thief will steal the blanket from under the sleeper by so tickling him that he rolls over first in one direction and then in another. While sensation is suspended a loud noise or a bright light, a shake or a sharp impression on the surface, will penetrate the barrier opposed to impressions and rouse the sleeper, and many persons have the faculty of waking at a given hour. Most of us, indeed, can wake up to catch an early morning train in case of need. The intensity of the respective sensory impression required to disturb sleep varies greatly in different individuals and in the same person at different times. A susceptibility to the disturbing influence of light and sound can be cultivated by sleeping in darkened rooms and with closed curtains. On the other hand, habit enables a Londoner to sleep, not only in spite of the more or less continuous roar of traffic, but through the thunder of a railway waggon or a post-office van tearing along a quiet street and many persons can sleep in broad daylight.

It may be said at once that the treatment of sleeplessness does not resolve itself into a choice of drugs. To compel sleep by opiates or sedatives is not to cure sleeplessness. It is true that when the brain has been overtaxed by engrossing work, or the nervous system has been shattered by a severe shock or exhausted by overwhelming anxiety or outworn by excitement, or the habit of sleep has been broken by long and anxious vigils over a sick bed, a judiciously selected remedy may quiet the molecular vibrations and restore selfcontrol to the brain and so break the wakeful habit and renew the patient's confidence. Setting aside these exceptional cases the sedative, whatever it may have been, may leave the cause of sleeplessness untouched, and while this remains in full operation the nervous system becomes accustomed to the drug and a larger and larger dose is required. Then, moreover, the effects of the drug are not confined to the production of sleep. The substance is carried by the blood everywhere and it may check secretions, derange digestion, impair the peristaltic vigour of the stomach and intestine, affect the circulation and deteriorate the blood, and interfere with the nutrition of the tissues. One effect all drugs have, and always have—they diminish the resistance and impair the manhood of the individual. It is not only that he has experienced relief and that he longs for it again, but he will not endure with patience and fortitude a privation of sleep which he would formerly have thought unimportant. So it goes on until the morphia habit is established or the patient becomes a slave to chloral or sulphonal or trional. Nothing is easier than to obtain a cheap kind of credit by prescribing a sedative, especially if its name is new to the patient and he can be assured that he is not taking an opiate properly speaking ; but it may be the first step in the downward course towards suffering, bodily and mental, of the most terrible kind. From what I have seen I should prefer to be a victim to morphia or to opium rather than to chloral or to sulphonal or to trional. If the reaction from the opium intoxication is painful there is at any rate a positive pleasurable exaltation, whereas the best that chloral and sulphonal can give is oblivion, and there is not only depression

but a pitiable loss of volition. The wretched subject can not make up his mind on the most trivial question, and when he has come to a decision he regrets it immediately. Besides this indecision there is loss of memory, and either from this loss of memory or from impairment of the moral sense no dependence is to be placed on his statements. The heart and the vessels lose their tone, the circulation becomes languid, and the tissues grow soft and flabby, till finally the victim is incapable alike of effort and enjoyment. Unfortunately these drugs are placed within the reach of all in the form of syrups and tabloids; there is no restriction on their sale, and they are constantly taken on the advice of chemists or friends. The medical man who prescribes any of them has thus no further control over their administration and incurs therefore a terrible responsibility.

The essential preliminary to the treatment of sleeplessness is the recognition of its cause in the particular case. We have therefore to consider the causes of sleeplessness. Of these the most important undoubtedly is the original constitution of the nervous system. The capacity for sleep and the readiness to sleep vary enormously in different persons. Some can command sleep at a moment's notice almost at any time and under any circumstance; with others sleep always requires careful wooing. But while there are inborn differences in this respect manifested even in infancy, much can be done to bring the nervous system into a condition which favours sleep or the reverse, and this is a point always to be borne in mind in the treatment of sleeplessness. Of all the influences which tend to bring the nervous system into a state in which sleep is ready, sound, and refreshing, the most important are fresh air and exercise. A sedentary mode of life has a contrary effect. Besides, therefore, protecting the light sleeper from all causes of sleeplessness and removing any which may be identified, it may sometimes be necessary to revolutionise his habits and to lay down special rules as to his mode of life. The old distich "After dinner rest awhile, after supper walk a mile" seems to have been written for the benefit of such an individual.

These naturally bad sleepers are greatly to be pitied. The slightest change in the bed or of pillows or coverings will give a bad night; the pillow must be high and firm for some, and it must be soft and low for others. Sleep in a strange room is for a time impossible. A chink in a shutter, or a badly-fitting blind, or ill-adjusted curtain admitting a single beam of light will cause some to wake up at daybreak. Some must have absolute darkness, others require a certain degree of artificial light. It is in such cases that the great difficulty arises of deciding whether sedatives of one kind or another may be given. Much depends on the kind of sleeplessness. If the patient can lie quiet and, while sleepless, remain tranquil, I should hesitate to give drugs. He has rest even if he does not sleep and very commonly there is sleep of which he is not conscious. An occasional dose may be given to parry the effects of any unusual excitement or fatigue. The choice of the drug would be determined a good deal by the experience of the individual, but if the pulse-tension were high chloral would be indi-

cated as a vascular relaxant; if it were low, paraldehyde or bromide or some such combination as morphia and hyoscyamus. When the patient tosses and fidgets and gets up looking worn and tired there is more need to have recourse to sedatives and it is extremely likely that their use will become more or less habitual. If possible bromides should be the drugs employed. There are cases in which a moderate dose of ammonium bromide just seems to bring the irritable and sensitive nervous system to an average condition and I have known patients to take it indefinitely without apparent injury. I cannot say this of any of the chloral or sulphonal class of drugs.

There are conditions of the circulation which interfere with sleep. Perhaps the most easily recognised of these is coldness of the feet. Anæmic girls are often kept awake by cold feet, and in debility from other causes coldness of the extremities may prevent sleep. For sleeplessness so caused a hot bottle is the obvious remedy, or, perhaps better, enveloping the legs in warm flannel up to and above the knees, which will usually be felt to be cold as well as the feet. Such patients should be warned not to dawdle while undressing but to change and get into bed quickly, and the feet should be vigorously rubbed. To anything of this kind, however, they are indisposed by the very languor and weakness which give rise to the coldness of the extremities. A great help to sleep in patients suffering from sluggish circulation is a little very hot and strong beef-tea or hot milk on going to bed. Stimulants should be avoided in the case of the young; there is less objection to them in elderly people, but in them the stimulant should not be relied upon simply as such, but should be given in the form of a hot drink, such as negus or spirit and hot water. Cold feet may prevent sleep when there is no weakness of any kind after hard intellectual work, especially when carried on late into the night. It is not a mere negative coldness which can be rectified by supplying warmth; external heat seems to be rejected and the feet refuse to be warmed by it. There is, in fact, spasm of the arterioles excluding the blood, just as when the feet are stone cold in fever while the temperature in the mouth or rectum is 103°F., and it may be pointed out that when the extremities are warmed by the application of external heat the warmth is not simply supplied from without; the vessels are relaxed by the heat applied to the surface and the warm blood is admitted. Under the circumstances we are considering, the reflex vaso-dilatation does not take place and the hot bottle, even if available, is of no use. The resource is friction, but this has to be persevered with for some time to be effectual. To stand in cold water for a few minutes before rubbing the feet is an excellent expedient, resorted to, as I have found, by many hard-working friends and to which I can bear personal testimony. Hot beef-tea or milk would be invaluable, or even a drink of hot water, but brain-workers are too much engrossed with the task in hand for forethought to provide these remedies. I would particularly warn my young hearers who may be sleepless after hard work against opiates. They may be most effectual and may not seem to disturb the digestion or interfere with work next day, but I think the judgment is liable to be impaired

so that dominant ideas are not adequately tested and get the upper hand, while the ultimate results may be disastrous.

Sleeplessness may be due to an exactly opposite condition—a hot burning feeling in the feet which, however, more commonly wakes the patient up than prevents his getting to sleep. It may be part of a general sense of heat and discomfort attending gout, or sub-acute rheumatism, or rheumatoid arthritis, when the feet may be really hot, or the sensation of heat may be subjective only, while the feet are cold to the touch and deep crimson in colour. Patients will often insist on putting the feet out of bed, but the relief thus obtained is only partial and temporary. The treatment of the sleeplessness will be that of the underlying condition. If an opiate is required, as may be the case, especially when there is pain, an old-fashioned Dover's powder is one of the best vehicles and there is little danger of its laying the foundation of the opium habit. Or phenacetin or antipyrin may afford relief and find a legitimate opportunity of usefulness.

Conditions of the circulation which do not give rise to such conspicuous effects are very frequently attended with sleeplessness. One of these is high arterial tension. It may be supposed that the high blood-pressure does not permit the arterioles to shut off the supply and reduce the cortical circulation. Whatever the explanation may be the cases are very common in which high arterial tension and sleeplessness go together and in which the lowering of the one affords relief to the other. Since the presence in the blood of nitrogenised waste is one cause of high tension the treatment dictated is to minimise its formation and promote its elimination. The patient will be put on a regulated diet in which the proportion of animal food will be adjusted to the individual requirements. In this the patient's previous habits and dietetic idiosyncracies must be taken into account. Nothing can be more absurd than to lay down rules to be applied indiscriminately to all sorts of constitutions. A glass of water night and morning is usually a good thing. Among the most efficacious of the eliminants is a mercurial aperient which, as it may have to be repeated once or twice a week for a long time, must be mild. A single grain of calomel or one or two mercurial pills or mercury with chalk with colocynth and hyoscyamus, or compound rhubarb pill, is usually sufficient and may be taken twice a week indefinitely. The eliminant action of the mercurial aperient may be followed up by mild salines or by alkaline tonics.

Rare instances are met with in which an exactly opposite condition—extremely low tension—appears to give rise to sleeplessness, or at any rate makes sleep in the horizontal position difficult or impossible. In the sitting position these patients can scarcely keep awake; at any period of the day they will drop off to sleep if they sit down and try to read; and even over the morning newspaper and after dinner they will sleep indefinitely until they go to bed and lie down when at once they are wide-awake. It seems as if the toneless vessels were incompetent to resist the slight increase of pressure within the cerebral vessels when the patient lies down. The treatment here must obviously be tonic.

By far the most common cause of sleeplessness is indigestion in its various forms, and the particular incident of indigestion which seems to be the most active antagonist of sleep is flatulence, especially gaseous distension of the stomach. Apparently it is mechanical pressure or stretching which prevents sleep, since sleep often at once follows the eructation of a few cubic inches of gas. The volume of gas displaced is quite insufficient to affect the splanchnic circulation, and it is not easy to understand in what direction the pressure operates which produces the result. There may be extreme dilatation of the stomach from pyloric obstruction without serious influence on sleep, and whenever the stomach has been displaced downwards, so that the lesser curvature is defined on the abdominal wall, or can

be followed by palpation, I have found that the effect on sleep was little marked. When, on the other hand, the upper line of gastric resonance has been high, corresponding with the fifth space and the base of the ensiform, sleeplessness is common even though the area of resonance may not be very extensive. It does not follow that when flatulence is the cause of sleeplessness the patient should suffer from the ordinary symptoms of flatulent dyspepsia, epigastic pain or discomfort, and frequent eructations. Flatulent distension of the stomach produces its worst effects when we are not conscious of its existence. When we suffer from flatulence in the ordinary sense of the word what we are conscious of is not the flatulence itself but the effort to get rid of or displace it. When it is tolerated by the stomach and no effort is made to expel it its more serious effects are produced—anginoid pain in the cardiac region, palpitation of the heart, and sleeplessness. It will be clear from what has been already said that the form of dyspepsia attended with sleeplessness is that in which the special characteristic is atony of the muscular walls of the stomach, allowing of the passive distension of the organ. A further inference will be obvious—that it is in brain-workers whose nervous energy is diverted from the work of digestion or in those whose mode of life is sedentary and whose general nerve-tone is low, or in persons depressed by anxiety and worry, that this form of dyspepsia is most liable to occur. One way, indeed, in which grief and worry and anxiety give rise to protracted sleeplessness is through the effects on digestion. Sleep will come to the relief of grief and even anxiety gives way to weariness and sleep, but nothing is more certain than the effect of mental depression on digestion, and when the sufferer is roused by flatulence or abdominal discomfort the distressing or agitating idea takes possession of the mind and banishes further sleep. Flatulent dyspepsia, again, is one of the causes of the sleeplessness which is said to belong to old age. It is not old age as such to which sleeplessness is to be attributed but to the infirmities attending it—to vascular conditions or functional derangements of one kind or another of stomach, bowel, or bladder. Flatulent dyspepsia very often interferes with sleep on first going to bed and may keep the sufferer awake indefinitely. This faculty it shares with various causes of sleeplessness, but one very common variety of sleeplessness is highly characteristic of flatulence. The patient, possibly a good sleeper naturally, falls asleep on getting into bed and then wakes punctually night after night at a given hour, at two o'clock, three o'clock, or four o'clock as the case may be and then lies awake for the rest of the night. The explanation is that the last meal has not been entirely passed on into the duodenum. Fermentation takes place in the food which remains in the stomach and after a certain time sufficient gas and acidity have been developed to disturb the sleep.

The treatment of sleeplessness due to flatulence is, of course, that of the dyspepsia. This in itself would demand an entire lecture for its discussion and you will not expect me to enter upon it. All I need do is to enumerate the expedients for preventing the interference with sleep. The simplest of these is a tumbler of hot water at bedtime, and it is usually effectual. The stomach is stimulated to contract, much of the gas present in it at the time is expelled, and any fermenting contents are swept on into the small intestine where the antiseptic bile checks further fermentation and where flatulence gives rise to less disturbance. The hot water should be taken before undressing so that it may have time to clear out the stomach and expel the gas before the patient lies down. Should hot water not be sufficient sal volatile and carbonate of soda may be taken before it or an alkaline carminative draught may be given—carbonate and sulpho-carbonate of soda with aromatic spirit of ammonia, compound tincture of chloroform, or ether and peppermint or camphor water and sometimes bromide of sodium

or ammonium may be added with advantage for a time. Friction over the epigastrium or between the shoulders may help to disperse the flatulence. I do not think it is well to allow even so simple and harmless a matter as a nightly dose of hot water to grow into a habit. As a rule it should not be continued for more than a week at a time as the response of the stomach becomes imperfect. It has seemed to me that an alkaline draught can be taken longer without losing its effect. I know several patients who wash out their own stomach at bedtime whenever they have sensations which lead them to apprehend a bad night.

Some individual causes of sleeplessness must be considered. Tea and coffee are looked upon as powerful agents in the prevention of sleep and there are no doubt many here who have found a cup of strong tea or coffee an excellent preparation for an evening's work. Certain kinds of tea and really good coffee do undoubtedly act as stimulants to the brain; they help the tired nurse to keep awake and fresh, and keep sleep at bay for the student who is working far into the night. They may, indeed, produce a condition of intense wakefulness. When, however, it is stated that a cup of tea in the afternoon will keep a given person awake all night, I doubt very much whether it is the tea, as such, which is responsible for the result. Imagination often plays a very influential part in the effect. Let such a person be confidently assured that pure China tea, brewed for not more than two minutes, is innocent of such evil properties and he or she will often take it with impunity whether it conforms exactly to the description or not. But afternoon tea is a very common cause of flatulent dyspepsia and in this way may be responsible as the cause of protracted sleeplessness. So with the after-dinner cup of black coffee, it is often the dinner and not the coffee which disturbs the night's rest.

Influenza has familiarised us with sleeplessness of a most obstinate character. There is always asthenia, cardio-vascular and nervous, which must be borne in mind in the treatment. With the general effect on the nervous system there may be complications which contribute seriously to the prevention of sleep and may even interfere with the action of powerful opiates or sedatives. Among these is acute dilatation of the stomach, a not uncommon incident of an attack of influenza. It was present in the worst case of post-influenzal sleeplessness that I ever saw, in which there was not a wink of sleep for four days and nights. Sleeplessness following influenza must be treated as an acute affection and, unless there is speedy improvement under such tonics as arsenic or phosphorus, strychnine and quinine, together with measures for the relief of functional derangements, opiates may be given without hesitation and I think it better to have recourse at once to combinations of opium or morphine and hyoscyamus with carminatives than to try sulphonal, or trional, or chloral and bromides. In case of need morphine may be given hypodermically and it usually adds greatly to the efficiency to combine it with strychnine as well as atropine. The immediate effect of large doses of alcohol is torpor. A result of long continued alcoholic excess is sleeplessness culminating in delirium tremens. The remedy here is total abstinence with considerable doses of strychnine

or nux vomica and perhaps digitalis. At the same time the liver and stomach disorders resulting from the alcohol will demand attention as they may keep up the sleeplessness and are indeed frequently its main cause.

I do not know whether it is worth while mentioning some of the popular remedies for sleeplessness. Among them is the hop pillow which certainly sometimes seems to soothe. There is, again, the saffron bag applied to the pit of the stomach immortalised by Bulwer Lytton in "The Caxtons." Gently smoothing the hair is undoubtedly efficacious in many cases, as is also, but less frequently, sponging the burning palms. Dipping the face in cold water is one of the expedients of the worker late at night; some will sponge the entire head. Then there are the different ways in which people try to hypnotise themselves by watching and counting the invisible breath, slowly counting imaginary sheep as they pass through an imaginary gate, and the like. I have not ventured on the large subject of the employment of hypnotism. That it has its legitimate uses in inducing sleep I have no doubt. It has not been my good fortune to meet with a case where it has overcome the morphine habit or rescued the victim of chloral or sulphonal. —*Lancet*, Jan. 27, 1900.

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THERAPEUTICS AS A SCIENCE.

IV.

(*Continued from* Vol. xviii, No. 2, p. 59.)

WHETHER our own country had the honor of recognizing the principle of similars requires to be discussed more fully than we can do in this place. We intend to do it in a future article. The proverb, विषस्य विषमौषधम्, which is so common as to be in every body's mouth, would seem to lend color to the view that our ancient physicians did recognize the principle. And the poet, in the manner in which he employs it in the following couplet, gives proof of its antiquity:

दृष्टिं देहि पुनर्बाले कमलायतलोचने।
श्रूयते हि पुरा लोके विषस्य विषमौषधम्॥

"Cast thy glance once again, Oh! lotus-eyed!
It has been heard from olden times, poison is remedy for poison."

Rightly understood here we have the principle of similars in its isopathic aspect. The poet makes the love-stricken complain of sickness from the influence of a maiden's glance and solicit the same influence for its cure. It may be said, however, that as two glances may not identically be the same, here we have, properly speaking, *simile* or similar rather than *idem* or the identical.

In the most ancient work on Hindu medicine extant, *Charaka Sanhita*, it is distinctly laid down, as a general rule, in the first

part of the work, *Sutrasthána,* that "Diseases, which are curable, can be made to disappear by medicines of *opposite* qualities administered with a due reference to place, dose and time."* But in other parts, notably in *Nidánasthána* and *Chikitsásthána,* there are passages in which drugs, diet, &c., are recommended in affections which they themselves are calculated to produce. Thus, in *Chikitsásthána,* the Part of the work on Treatment, in cases of vomiting depending upon phlegm, emetics are recommended. Of course it must be remembered that this was only with the object of inducing vomiting† in order to correct (the catarrhal condition of) the receptacles of phlegm and of undigested food, which is different from checking vomiting by medicines which produce vomiting.

If we examine the examples of the homœopathic application of drugs before Hahnemann, we shall find that this was directed to the correction of single symptoms, or of single diseases by name. Hence pre-Hahnemannic homœopathy was single-symptom-, or single-disease-homœopathy. Thus purgatives were employed against diarrhœa, emetics against vomiting, medicines that produce strangury against strangury, medicines that produce cough against cough, stramonium that produces disorders of the mind against mania, and so on. No attempt was made to apply a drug having a variety of actions to a disease having corresponding symptoms. This was one of the reasons of frequent failures of the application of the principle of similars and its consequent abandonment. For, observant physicians could not fail to see that it was not every purgative that could check a diarrhœa, nor every emetic that could check vomiting, nor every medicine that could produce strangury or cough that could relieve those affections, nor that stramonium always cured mania. Consequently there was no encouragement from such experience to proceed further with a method which proves so uncertain.

* विपरीतगुणैर्देशमात्राकालोपपादिते ।
भेषजैस्ते निवर्त्तन्ते विकाराः साध्यसम्मताः ॥
चरकसंहिता, सू, १ ॥

† कफाशिकायां वमनं प्रशस्तं सर्षपलीसर्षपनिम्बतोयैः ।
पिप्पलीतवैः सैन्धवसम्युक्तैर्व्यस्यां कफामाशययोधनार्थम् ॥
चरकसंहिता, चि, २१ ॥

GROWTH OF HOMŒOPATHY IN HAHNEMANN'S MIND.

To watch the progress of a discovery in the discoverer's mind, to trace the steps which lead to it, to have a view of the scaffolding by which the superstructure is erected from the foundation, must always be an interesting study, and cannot fail to be instructive to those who want to follow in the footsteps of the great men who have enriched the world with revelations of nature's secrets. The discovery which Hahnemann was privileged to make was, in our opinion, the greatest and the most beneficent that has ever been made. Our readers will, we have therefore no doubt, be interested to know how the first idea flashed into his mind which culminated in that discovery.

Just a glance as to how he qualified himself for the practice of the Healing Art. His academic medical studies began in 1775 at Leipsic and ended in 1877 at Vienna, where from want of means he could only stay for nine months, that is, in less than three years. But during this short time he had made such extraordinary progress that by his attainments he won the esteem, confidence and love of the celebrated Dr. Von Quarin, the Emperor of Austria's family physician, so much so that he was the only one of his age who was taken to visit the doctor's private patients, and at last was recommended to be the family physician and custodian of the library of the Governor of Transylvania, Baron Von Bruckenthal. At Hermanstadt, the capital of Transylvania, Hahnemann practised medicine for one year and nine months. "Here," says he, "I had the opportunity to learn several other languages necessary to me, and to acquire some collateral knowledge that was pertinent and still seemed to be lacking in me. I arranged and catalogued his matchless collection of ancient coins as well as his vast library." But he was anxious to qualify himself for the highest medical degree which a university can confer. Accordingly in 1789 he came to Erlangen and after attending the lectures of the University there to complete his medical education, he defended, on August 10th of the same year, that is, in his twenty-fourth year, his thesis on "A Consideration of the Etiology and Treatment of Spasmodic Affections," and "received the honorable title of Doctor of Medicine." The irresistible love for his fatherland soon brought him back to Saxony where, in the mining town of

Hettstadt, he began his career as a practising physician; but finding it "impossible to develop either inwardly or outwardly, I left the place," says he, "for Dessau in the spring of 1781, after a sojourn of nine months. Here I found a better and more cultured society. Chemistry occupied my leisure hours and short trips made to improve my knowledge of mining and smelting filled up the yet quite dormer windows of my mind." Towards the close of 1781 he received what he calls "an insignificant call as physician to Gommern." Soon after this appointment, that is, in the end of 1782, he married the only daughter of an apothecary, singularly symbolic of the complete revolution he was destined to effect in Pharmacy.

It will be seen that Hahnemann was not only a fully qualified physician, as much as any of his contemporaries, but his knowledge of the most important ancient and modern languages, together with his special deep knowledge of chemistry as testified to by the great Berzelius himself, and his general knowledge of other collateral sciences, gave him an advantage in being able thoroughly to ransack the records of medicine past and present, and survey the whole field in all its bearings, which few of his contemporaries did possess. If any one of his time, he was the most competent to pronounce an opinion on the state of medicine as it was being practiced since its dawn in ages past. And what was that opinion?

Hahnemann was not long in practice when he became dissatisfied with it. He has related how this dissatisfaction settled upon his mind in his now famous "Letter to a Physician of High Standing on the Great Necessity of a Regeneration of Medicine," the physician was no other than the great Hufeland, the Nestor of Medicine at the time in Germany. He thus wrote in 1808:

"For eighteen years I have departed from the beaten track in medicine. It was painful to me to grope in the dark, guided only by our books in the treatment of the sick,—to prescribe, according to this or that *(fanciful)* view of the nature of diseases, substances that only owed to mere opinion their place in the materia medica; I had conscientious scruples about treating unknown morbid states in my suffering fellow-creatures with these unknown medicines, which, being powerful substances, may, if they were not *exactly* suitable (and how could the physi-

cian know whether they were suitable or not, seeing that their peculiar, special actions were not yet elucidated) easily change life into death, or produce new affections and chronic ailments, which are often much more difficult to remove than the original diesease. To become in this way a murderer, or aggravater of the sufferings of my brethren of mankind, was to me a fearful thought,—so fearful and distressing was it, that shortly after my marriage I completely abandoned practice and scarcely treated any one for fear of doing him harm, and—as you know—occupied myself solely with chemistry and literary labours.

"But children were born to me, several children, and in course of time serious diseases occurred, which, because they afflicted and endangered the lives of my children—my flesh and blood—caused my conscience to reproach me still more loudly, that I had no means on which I could rely for affording them relief."

This dissatisfaction with the prevalent methods of treatment, was the first step which led Hahnemann to work out the regeneration of medicine by establishing it on the basis of natural law, which is the basis of all positive science. If he had been content with routine, with his eyes closed as regards the consequences to patients and open as regards his own earnings, medicine would probably have remained to this day what it was before the beginning of the century. But his conscientious scruples, his keen observant faculties, his undaunted courage, his firmness in his poverty which was growing with his growing family, above all his faith* in the goodness of the Creator,—

*We have evidence of this fervid faith (without which our lives would be an interminable misery) in the letter quoted from. Thus:

"But perhaps it is in the very nature of this art, as great men have asserted, that it is incapable of attaining any greater certainty.

"'Shameful, blasphemous thought,' I exclaimed.—What, shall it be said that the infinite wisdom of the Eternal Spirit that animates the universe could not produce remedies to allay the sufferings of diseases it allows to arise? The all-loving paternal goodness of Him whom no name worthily designates, who richly supplies all wants, even the scarcely conceivable ones of the insect in the dust, imperceptible by reason of its minuteness to the keenest mortal eye, and who dispenses throughout all creation life and happiness in rich abundance—shall it be said that He was capable of the tyranny of not permitting that man, made in His own image, should, even by the efforts of his penetrating mind, that has been breathed into him from above, find out the way to discover remedies in the stupendous

these qualities, which no other physician before or after him has yet shown, were the salvation of medicine and of mankind.

The fact of mere dissatisfaction with the methods of treatment in vogue, of simply seeing through the incompetency of those methods to bring about true cures, would have been of no avail in the work of regeneration of medicine, if Hahnemann had failed to see why it was that these methods, though recommended and backed by the authority of ages and of the greatest masters of the art, were so incompetent. He saw that the medicines, the instruments for combating disease, did not possess the virtues they were credited with. For the most part these virtues were hypothetical, based upon arbitrary assumptions, or were pure creations of the imagination, or were drawn from sources which are not reliable simply because they are not the proper sources to give us any information of the true healing virtues of medicinal substances. These sources were chemistry, botany, sensible properties, and experiments on the blood of animals or on the living animals themselves.

Each of these means for the discovery of the medicinal virtues of remedial agents he subjected to a most searching criticism, and arrived by an irresistible logic at the conclusion that "the aid of chemistry is still imperfect, and must only be resorted to with caution; that the similarity of genera of plants in the natural system, as also the similarity of species of one genus, give but obscure hints; that the sensible properties of drugs teach us mere generalities, and these invalidated by many exceptions; that the changes that take place in the blood from the admixture of medicines teach nothing; and that the injection of the latter into the blood vessels of animals, as also the effects on animals to which medicines have been administered, is much too rude a mode of proceeding, to enable us therefrom to judge of the finer actions of remedies." Notwithstanding the vast improvements

kingdom of created things, which should be able to deliver his brethren of mankind from sufferings often worse than death itself? Shall He, the the Father of all, behold with indifference the martyrdom of his best-loved creatures by disease, and yet have rendered it impossible to the genius of man, to which all else is possible to find any method, any *easy, sure, trustworthy* method, whereby they may see diseases in the proper point of view, and whereby they may interrogate medicines as to their special uses, as to what they are *really, surely* and *positively* serviceable for?"

that have been made in pharmacological experiments on animals and notwithstanding that much real knowledge has been and is being obtained thereby, the criticism of Hahnemann as regards the application of that knowledge to the healing art, especially as regards human diseases, still holds good.

This exposure or demonstration of the futility of the accepted methods of finding out the virtues of remedial agents was the second step of the progress of discovery in his mind. The next step was but a natural advance upon this—an inevitable inference from it, namely, "nothing remains but to test the medicines we wish to investigate on the human body itself." But medicines have been and are being tried every day on the human body; and no satisfactory result has followed. Why? Simply because, as Hahnemann saw with the eye of genius, "a false way was generally followed, inasmuch as they were only employed empirically and capriciously in diseases. The reaction of the diseased organism, however, to an untested or imperfectly tested remedy gives such intricate results, that their appreciation is impossible for the most acute physician. Either nothing happens, or there occur aggravations, changes, amelioration, recovery, death—without the possibility of the greatest practical genius being able to divine what part the diseased organism, and what the remedy (in a dose, per chance, too great, moderate, or too small) played in effecting the result. They teach nothing, and only lead to false conclusions." And he exclaims—"Alas! the two thousand and five hundred years, during which this way alone has been followed, shew that it is beset with innumerable, insurmountable illusions, and *never* leads to certainty."

If then the trials of medicines on the sick, especially in a state of combination, can never give us a certain knowledge of their true virtues, how are we to attain to that knowledge? This led Hahnemann to the next or fourth step. "The true physician whose sole aim is to perfect his art, can avail himself of no other information respecting medicines than—First—What is the *pure* action of each by itself on the human body? Second—What do observations of its action in this or that simple or complex disease teach us?" Now the pure action of a medicine can only be the action it itself or alone produces in a human being not in a state of disease but in a state of health, and, therefore, "there is

no other possible way in which the peculiar effects of medicines on the health of individuals can be accurately ascertained—there is no sure, no more natural way of accomplishing this object, than to administer the several medicines experimentally, in moderate doses, to healthy persons, in order to ascertain what changes, symptoms and signs of their influence each individually produces on the health of the body and of the mind; that is to say, what disease-elements they are able and tend to produce."

It must be admitted that Hahnemann was anticipated in this recognition of the necessity of the testing or proving of drugs on the healthy human body, about half a century before, by the celebrated Albrecht von Haller, Professor of the University of Göttingen. This distinguished man,—"the prince of physiologists" of his time, and of whom it has been said that "no individual, either of ancient of modern times, has equalled him in the extent of his erudition, and the magnitude of his labors,"—made the following remarkable recommendation in the preface to his Swiss Pharmacopœia: "In the first place, *the remedy is to be tried on the healthy body*, without any foreign substance mixed with it; a very small dose is to be taken, and attention is to be directed to *every* effect produced by it; for example, on the pulse, the temperature, the respiration, the secretions. Having obtained these obvious phenomena *in health*, you may then pass on to experiment on the body *in a state of disease*." Whether Hahnemann took the hint from Haller or not, this much is certain that, as Dr. Dudgeon has remarked; "notwithstanding this very explicit recommendation to test medicines on the healthy body, and notwithstanding the immense celebrity of Haller, neither he himself nor any of his contemporaries thought of practically carrying out his advice." It was Hahnemann who actually carried out systematic provings under the strong conviction that "the alterations that medicines produce in the healthy body, do not occur in vain; else why should they occur?" He believed that "these changes have an important, an extremely important signification," nay, that they are "the only utterance whereby these substances can impart information to the observer respecting the end of their being."

(To be continued.)

PUNSAVANA;
OR THE CAUSING THE BIRTH OF A MALE CHILD.

BY DR. SURENDRA NATH GOSWAMI, B.A., L.M.S.,

CHAPTER I.

INTRODUCTION.

Marriage is looked upon by an orthodox Hindu as a religious duty, (1) which he owes to himself, as well as to his departed ancestors. With this particular view in mind, he enters into a matrimonial bond, in the hope of leaving behind him, at least, one male offspring, who can take up the task of performing the periodical ceremony of *Sradh*, for the repose of his departed ancestors, in Heaven, after he himself is gone. (2)

Granting this to be the real feeling of his mind, it is naturally expected that there lies in his heart a secret desire, that the production of a male offspring should not be left altogether to Chance. Should Nature stand in opposition to his wish, the medical science of his country will, at least, come forward with certain contrivances, to make him pass smoothly over this barrier, by having the production of a male offspring artificially secured in his favour.

To satisfy this secret wish, Indian medical science, at one time, made certain efforts, the results of which we intend to embody in the following pages, examining them, as we proceed, in the light of western medical science which has now found a foremost place amongst the experimental sciences.

Though it is true that our countrymen did not leave us any lengthy chapters on Embryology, nor did they attempt to

1. अदारस्य गतिर्नास्ति सर्व्वास्तस्याफलाः क्रियाः—मत्स्यसूक्तं ।
2. पुत्रार्थे क्रियते भार्य्या पुत्रःपिण्डप्रयोजनः ।
   अथ सर्व्व प्रयत्नेन पुत्रार्थी च भवेद्गृही ॥

1. A man without wife leads an aimless life; what he does, he does to no purpose.

2. The object of marriage, is to beget a male child; for the offering of *pinda* must be performed by the male child alone. Hence it is incumbent upon every householder, to do his best, to secure a male child.

build up "five hundred" different theories of sex, like the modern scientists of Europe, it is nevertheless true, that in the midst of great diversities and differences, they succeeded in making a generalization which is now obtaining the highest eulogium from the best scientific men of the present century. The five hundred conflicting doctrines of sex can be, thus, generalized into one universal doctrine, *viz.*, the doctrine of ebb and flow of the uterine discharge, on alternate days, produced either naturally or by the artificial means of a regulated dietary.

But, before we enter into the narrative portions of our discourse, we think it necessary to give to our readers, at the outset, a short outline of the anatomical portion of the Science of Reproduction or Embryology, as it existed in India.

The Female Generative organs.

In doing so, the first thing that claims our attention, is the topography of the female Generative Organs. Like the male testes, there exist, in the human females, two homologous bodies, one on each side, known as the *Dimbakosha*, from which the female seeds or ova are produced. (3) These two seed-producing organs are again connected with two other homologous tubes or ducts called the *Dimbanadí* which open, one on each side, into the uterus. (4) These two tubes correspond in character and function to the two male seminal ducts, and are called conjointly with the two ovaries, the *Gauri* and the *Chándramasí*.

Besides these structures, there exists a third organ, which, being supplied with an abundance of nerve fibres, forms one of the principal seats of voluptuous sensation. (5) On account of

3. द्वे शुक्रवहे,—द्वे शुक्रप्रादुर्भावाय द्वे विसर्गाय।
ते एव रक्तमभिवहतो नारीणामार्त्तवसंज्ञं ॥ सुश्रुतः शा-६ अः

4. जरायुपार्श्वे नाड्यौ द्वे डिम्बनाड्यौ प्रकीर्त्तिते।
डिम्बकोषहृयात् डिम्बं नयते गर्भकारणम् ॥ अत्रिः
(आयुर्वेदार्थचन्द्रिका)

3. There are two structures to carry the semen; two for generating it and two for ejaculating it. So, in the female, there are found homologous structures that are employed in carrying off the *ártava*.

4. The two tubes that originate from the two sides of the uterus are called the *dimbanadi*. They convey the female seed from the two seed-producing organs, for the purpose of generation.

its abundant nerve-supply it is called the *Samiraná ;* and not unlike the clitoris, it, being situated on the external surface of the female genitals, contributes no share in the process of fertilization.

Lastly, the organ, in which the fœtus is generated and developed, is the uterus proper and is called the *Garbhásaya.* If the

5. मनोभवागारसुखेऽबलानां
तिस्रो भवन्ति प्रमदाजनानां ।
समीरणा चान्द्रमसीच गौरी
विशेषमासासुपवर्णयामि ॥
प्रधानभूता मदनातपत्रे
समीरणा नाम विशेषनाड़ी ॥
तस्या सुखे यत् पतितं तु वीर्य्यं
तच्चिस्फलं स्यादिति चन्द्रमौलिः ॥
गौरीति नाड़ी यदुपस्थगर्भे
प्रधानभूता भवति स्वभावात् ।
पुत्रं प्रसूते बलधाङ्गना सा
कष्टोपभोग्या सुरतोपवेशात् ।
याचापरा चान्द्रमसी च नाड़ी
कन्दर्पगेहे भवति प्रधाना ।
सा सुन्दरी योषितमेव सूते
साध्या भवेदल्परतोत्सवेषु ॥ भावमिश्रः प्रथमभागः

5. In connection with the female organ of reproduction there are three structures the *Samiraná,* the *Chándramasi* and the *Gauri.* The following points noted below, are regarded as their marks of distinction. The structure called the Samiraná is situated at the external surface of the female generative organ ; according to Chandramauli, if the semen be discharged and deposited in this external part, fertilisation becomes ineffectual. The Gauri lies in the interior of the organ, and is, by nature, the most important structure. It brings on the seeds for male births ; the sexual excitement of the females becomes very great, when this structure is engaged in the manufacture of seeds. The third tube which is called the Chándramasi is equally important and is situated in the interior. It produces seeds for female births. The voluptuous sensation becomes comparatively less excited when this structure is engaged in the manufacture of seeds.

female generative organ be divided into parts, it is the third portion that will constitute the *Garbhásaya,* (6) the first two portions being concerned solely with the act of insemination. (7)

CHAPTER II.

Ovulation and Menstruation.

The female element of generation is quite a different thing from the menstrual blood. (8) The word *Artava,* though mostly confounded with blood, properly speaking, does not necessarily mean so. As the blood contains serum and blood corpuscles, the *Artava* in the Hindu *Sástras,* signifies the female generative seeds as well as the uterine discharge, in which they lie embedded. (9)

6. यद्भगनाभ्याकृति योनि स्थ्यावर्त्ता साच कीर्त्तिता ।
तस्यास्तृतीये त्यावर्त्ते गर्भशय्या प्रतिष्ठिता ॥
यथारोहितमत्स्यस्य मुखं भवति रूपतः
तत् संस्थानां तयारूपां गर्भशय्याविदुर्बुधा ॥ सुश्रुतः शा-५अः

7. शुक्र स्रुतः योनिमभिप्रतिपद्यते । (See. 21)

8. रक्तत्वत्वमार्त्तवं गर्भकञ्च—— सुश्रुतः सू १५अः

9. स्वस्थानतस्रुतात् शुक्राद्विन्दुमादाय मारुतः ।
गर्भाशयं प्रविशति यदा तुल्यं तदापरः ॥
आर्त्तवात् परमं बीजमादायास्यास्वमूलतः ।
यदा गर्भाशयं नेष्यत्यथ संमिश्रयेन्नारुत् ॥ प्रपञ्चसारः
(प्राणतोषिणी ४र्थं परिच्छेदः)

6. The axis of the parturient canal including that of the uterine cavity above and of the soft parts below, is not in a continuous straight line; it forms an irregularly curved line with three turns, resembling the figure ৩ that is found on the *Sankhanábhi.* It is in the last portion of this curved axis that the fœtus is developed.

The uterus resembles the head of a *Rohita* fish,—the ৩৩ representing the mouth; on account of its smallness leading into a wider channel. As the fish moves in the water the uterus can move freely between the bladder and the intestines.

7. The discharged semen is deposited, at first, in the first compartment.

8. The *ártava* bears a close analogy to the circulating fluid. In addition to its possessing all the characteristic features of blood, it contains a generating principle.

9. The nerve-muscular activity of the uterus helps, to a certain

The rupture of the graaffian follicles may take place either by itself, in due course, or prematurely, under sexual excitement. (9*a*) The discharge of the ovum, happening at some other time than the menstrual epoch, is said mostly to result in the production of an inferior kind of cell-segmentation. (9*b*)

According to the Hindu idea of menstruation, the appearance of bleeding is an external sign of the great internal change that happens simultaneously with it, within the ovary, in the shape of maturation of the Graaffian follicles. (10)

स्त्रीणां सप्तमो धातुरार्त्तवं शुक्रमष्टमम्। भावमिश्रः १म भागः

9 *a*. योषितोपि स्रवत्येव शुक्रं पुंससमागमे।
तत्र गर्भस्य किञ्चित्तु करोतीति न चिन्त्यते॥ भावमिश्रः १म भागः
घृतपिण्डो यथैवाग्निमाश्रितः प्रविलीयते।
विसर्पत्यार्त्तवं नार्य्यास्तथा पुंसः समागमे॥ सुश्रुतः श २अः २६

9 *b*. विकृतस्य • तु गर्भस्य कारणं तदपि भवति। भावमिश्रः

10. तत्पद्मेन भवेत् पुष्पं वृन्तयुक्तं त्रिपत्रकम्।
प्रफुल्ले तु त्रिपत्रे वै वाह्ये योनितदर्शनं॥ प्राणतोषिणी ४र्थ परिच्छेदः

extent, the separation of the male sperms, from the surrounding seminal fluid that is deposited within the vagina and brings them, at last, into the uterus, where they are brought into contact with the real germinal seed which is similarly carried down into the uterus, by the agency of the same nerve-muscular system. The menstrual blood of women is the seventh tissue; and the ovum, the eighth.

9 *a*. Females are known to discharge elements of generation whenever there is any occasion for sexual union, but this untimely discharge leads to no real conception.

As the fire causes the clarified butter to melt, so the male companionship brings on a discharge of the female generative seeds, in women.

9 *b*. If it contributes any share to the production of conception, the result becomes an imperfectly developed ovule.

10. In that lotus-like body, appears a bud surrounded with three petals and one stalk, which, on opening, makes the blood appear externally.

* "Yet an imperfect or partial kind of segmentation has been found also to occur in unfecundated ova. Enough, however, has been seen to show that some formative power resides in the germinal part of the yelk, independently of the concurrence of the male element. It is not improbable that this segmentation in unfecundated ova may occur to a great extent in the lower than in the higher animals."—Quain.

This periodical maturation and rupture of the Graaffian follicles is constantly going on in the female organ, during the whole of the child-bearing period. The source is, therefore, said to be inexhaustible; truly speaking, the number of the follicles is immense from the very first, as each ovary is found, immediately after birth, to contain more than thousands. The processes of periodical development and discharge of the ova, after the age of puberty, are known to the Hindus as the phenomenon of "budding." (11)

Though the phenomenon of menstruation and the discharge of ova are mostly found intimately associated, instances are not wanting, where impregnation is known to take place quite independent of menstruation. (12) In these cases the escape of the ova may be determined by the appearance of certain subjective symptoms which are said to happen, at no other than the menstrual period. (13)

11. श्रीशङ्कर उवाच—तस्य पुष्पस्य माहात्म्यं किं वक्तुं शक्यते मया ।
बिन्दुस्थानसहस्रन्तु पुष्पमध्ये प्रियम्वदे ।
बुद्बुदा येऽत्र तिष्ठन्ति तत्रैव सन्तति र्भवेत् ॥
एवं क्रमेण देवेशि सहस्रं सन्ततिर्यदि ।
वर्द्धमानं यदा पुष्पं तदा किञ्चिन्न जायते ॥ प्राणतोषिणी ४र्थ परिच्छेदः

12. ऋतुस्तु द्वादशरात्रं भवति दृष्टार्त्तवः ॥
अदृष्टार्त्तवाप्यस्तीत्येके भाषन्ते ॥ सुश्रुतः शा-३अः

13. क्षामप्रसन्नवदनां स्फुरच्छ्रोणि पयोधराम् ।
स्रस्ताक्षिकुक्षिं पुंस्कामां विद्यादृतुमतीं स्त्रियम् ॥

वागभटः शारीरस्थानम् १म अः २२ श्लोकः

11. *Sankara* said :—It is impossible for me to describe that strange flower ! There are thousand germinal seeds in it, and the one, which looks bubble-like, becomes the seed of a future individual. In this way if thousand individuals come forth from this flower, it still knows no decay.

12. The menstrual epoch lasts for 12 nights ; but there are cases, where no such external discharge makes its appearance.

13. The approach of the menstrual epoch in women can be guessed by their bright and cheerful countenance; by the rythmical contraction of their gluteal region, and of their breasts ; by the flaccidity of their

The menstrual discharge consists of pure blood; it has no tendency towards coagulation and is always found in a fluid condition. It is rather darkish in tint and possesses a characteristic heavy odour (see 18). If it stains the linen it leaves no permanent mark upon it. (14)

It happens once every lunar month and continues each time for from three to five days. (15) It usually appears for the first time at the 12th year and continues to occur regularly afterwards, up to the fiftieth year. (16)

The source of the discharge is the body of the uterus. It is due to the degeneration, disintegration and removal of the uterine mucous membrane which closes up, by its presence, the mouths of the uterine blood vessels and thus prevents the escape of blood. In case of impregnation, (instead of disintegrating and

14. आर्तवं पुनः ।
लाक्षारसयशाङ्गं धौतं यच्च विरज्यते ॥ वाग्भटः
शारीरस्थानम् १म अः १६श्लोकः

15. मासि मासि रजः स्त्रीणां रसजं स्रवति त्र्यहम् । वाग्भटः
शारीरस्थानम् १म अः

16. तद्वर्षाद्द्वादशात् काले वर्त्तमानमसृक् पुनः ।
ज्वरापक्वशरीराणां याति पञ्चाशतं क्षयं ॥ सुश्रुतः शा-२अः
द्वादशादिति प्रायिकमेतत् । एकादश वार्षिकानामपि स्त्रीणां
रक्तप्रवृत्तिदर्शनात्—पञ्चाशतः क्षयमित्यात्वाप्येवमेव चिन्त्यम् ।
अरुणदत्तः

eye-lids, and of their lower abdominal muscles; and lastly by their desire for a male companion.

14. The female generative element is known to be of good quality, when the menstrual blood holds the appearance of melted lac or of the blood of a hare or when the linen, stained with it, gives off the colour, just on washing.

15. In case of women, the nutritive fluid of the body is converted into the menstrual discharge, once every month; the bloody flux continues for three days.

16. It appears for the first time at the 12th year, and ceases at the 50th, when the body is mostly found decaying with age. The 12th year is the average age. It sometimes so happens that the discharge appears even at the 11th year. The same is to be thought about the 50th year.

degenerating as it should otherwise be) it slowly transforms itself into the fœtal covering and permanently closes up the blood-vessels, on the inner surface of the uterus, thus suspending the menstrual function, (17) for some time, during pregnancy and lactation.

Now, if the presence of the uterine mucous membrane be, in this condition of non-degeneration and non-disintegration, regarded as sufficiently preventive of the menstrual discharge, its non-presence can be, on the other hand, safely assumed to be the principal cause that leads to the production of the uterine hæmorrhage. (18)

As Goodman attempted by his cyclical theory of menstruation to solve the mysterious problem of this monthly periodicity, so the Hindu physiologists endeavoured to find out a clear solution

17. यास्ति चर्म्मावृतिः सूक्ष्मा जरायु सा निगद्यते ।
शुक्रशोणितयो र्योग स्तस्मिन्नेव भवेद्यतः ।
तत्र गर्भो भवेद्यस्मात्तेन प्रोक्तो जरायुजः ॥ शिवगीता ८अः ११।१२
गृहीतगर्भाणामार्त्तववहानां स्रोतसां वर्त्मान्यवरुध्यन्ते
गर्भेण तस्माद् गृहीत गर्भाणामार्त्तवं न दृश्यते—सुश्रुतः शा-४अः
ततस्तदधः प्रतिहतमूर्द्ध्वमागतमपरञ्चोपचीयमानमपरेत्यभिधीयते । शेषञ्चोर्द्ध्व-
तरभागं तं पयोधरावभिप्रतिपद्यते तस्मात् गर्भिण्यः पीनोन्नतपयोधरा भवन्ति ।
सुश्रुतः शा-४अः

18. मासेनोपचितं काले धमनीभ्यस्तदार्त्तवं ।
ईषत्कृष्णं विगन्धञ्च वायुर्योनिमुखं नयेत् ॥ शा-३अः

17. The thin membranous covering of the uterus is called the *Jaráyu* or the decidua. When the union of the two generative elements happens over this membrane, a fœtus is developed. So the product goes by the name of *jaráyuja* or the decidual. In pregnancy, the orifices of the uterine bloodvessels are closed up by the fœtal covering, so the bloody exudation cannot take place in the pregnant women. The determination of blood downwards being thus prevented, a part of it collects a little higher up, and there helps the formation of the *apará*, i.e., the placenta. The rest passes still higher up, and attaining the breasts makes them increase in bulk.

18. In case of menstruating women, it takes one month to make the uterine blood-vessels fully congested; when the congestion attains its climax, the activity of the nerve-centres becomes excited and the result is the discharge of a slightly dark, odourless fluid.

(To be continued.)

EDITOR'S NOTE'S.

Epispadias of Female Urethra.

Wojriechowski (*Przegland Lekarski*, No. 19, 1900) was consulted about a girl, aged 21, subject since birth to incontinence of urine. The clitoris at first sight seemed absent, the labia imperfectly developed. At the site of the clitoris was a quadrilateral surface, dry, smooth, and shiny, bearing in its centre a depression with somewhat elevated borders. Below the smooth surface was an oval urethral orifice of the calibre of a lead pencil; urine issued from it from time to time. When the lesser labia were held apart, the surgeon's forefinger could be passed without stretching into the imperfect urethra. The prepuce was also completely split. The patient admitted that she had had frequent connection through the urethra. The inner genitals seemed normal. The urethral canal was dissected up, a wedge-shaped piece cut off the free edge on each side, and the vivified edges then united by suture. Lastly, on Gersuny's now well-recognised principle, the sutured urethra was twisted 90° and fixed, a self-holding catheter being left in its canal. Some of the sutures cut through and the twisted urethra resumed its old position, but the patient for the first time in her life, could hold up to about half-a-pint of urine for several hours.—*Brit. Med. Journ.*, Feb. 24, 1900.

The Urine of Epileptics.

Edwin G. Klein (*New York Medical Journal*, December 30th, 1899) reports the results of examination made on the urine of 23 patients who were subject to epileptic attacks. The urine was in each case collected as soon after an epileptic seizure as possible. There was but little polyuria, and a faint trace of albumen was met with in 15 of the 23 cases. One case showed more than a trace of albumen, and this in sufficient quantity to be detected by Heller's cold nitric acid test, and the test of boiling after faint acidification, and in this case there was evidence of chronic nephritis. The occurrence of a convulsion was followed in this patient by a slight increase in the amount of albumen. The history of this patient was instructive. He had been admitted to hospital 15 years previously suffering from an attack of nephritis which was of comparatively recent origin, and without any obvious assignable cause. At that time he was in good general physical condition. He had suffered from fits shortly before, and it was suspected that the renal trouble had its beginning as a functional albuminuria associated with epileptic seizures. In 3 of the 23 cases the urine showed the presence of albumose, and this was regarded as an evidence of defective metabolism. Chlorides were present in excess in 14 out of 21 cases examined after a convulsion. In 6 out of 10 patients examined in the intervals between the epileptic seizures the chlorides of the urine were found to be present in normal quantity, and in the remaining 4 they were diminished. Careful examination failed to reveal the presence of sugar (glucose) in any of the samples of urine examined. Klein points out that

although a marked glycosuria can be readily produced, and may even be present in epileptics, it is not considered to be of so grave and serious a nature as in true diabetes mellitus.—*Brit. Med. Journ.*, February 24, 1900.

Applied Science in Modern War.

One of the notable circumstances connected with the present war in South Africa has been the wide and varied application of the results of modern science in regard to it. Setting aside altogether those of a purely military character, such as arms of precision and rifled and quick-firing guns, the use of which has demonstrated the enormous advantages they are capable of conferring in defensive warfare, there are many other directions in which the influence of applied science may be recognised. We perform nowadays much of our scouting by balloons and transmit the result of observations obtained from an altitude and supplemented by the aid of field-glasses to troops advancing or operating on the field of battle. The best telescopes and an abundance of field-glasses are always in requisition; the latter may be said to form an essential in the list of personal field equipment. By means of wireless telegraphy and with the aid of kites, communication has been successfully established between various stations occupied by British troops in the theatre of war in Africa. As regards our sanitary and medical services, a stricter application of the rules of practical hygiene has been attended with a remarkably progressive improvement in the health of our soldiers in the field in the successive expeditions which have taken place since the time of the Crimean war. Infective wound diseases, which used in past times to prove a veritable scourge among our wounded in military hospitals, have been practically banished from them by universal and scrupulous attention to cleanliness, by the rigid use of antiseptic dressings in wounds and injuries, and by the performance of all operations upon patients under anæsthesia; while the use of the Roentgen rays has enabled us to detect the presence and exact site of any missile or foreign body. The various ingenious probes for the detection of bullets embedded in the tissues are longer seen in military surgery but have been relegated to the surgical museum among other relics of past art. And these are only a few of the innovations for which applied science is responsible.—*Lancet*, Feb. 24, 1900.

Alcohol as an Antidote in Carbolic Acid Poisoning.

In a recent number of *Merck's Archives* (December, 1899) an editorial article is devoted to the above subject. The writer of the article observes that alcohol, as was first suggested by Phelps and Powell, is one of the best antidotes for carbolic acid poisoning. Phelps declared that he had found in alcohol a safe and sure preventive against the escharotic action of concentrated carbolic acid, which was the mischief most to be feared in cases of poisoning by the strong acid. From a careful survey of recorded cases of carbolic acid poisoning, in which over 60 grains of the poison had been taken, it appears that

where no alcohol was administered the termination was in every case fatal. On the other hand, in all instances where alcohol was given the patient survived, although it is stated in more than one instance that it was given as a stimulant to prevent collapse rather than with the knowledge that it acted as a specific antidote. The article also points out that it is often difficult and sometimes impossible to get emetics to act successfully in such cases of poisoning. The method of treatment which is recommended is as follows. The patient is promptly made to drink a few ounces of whisky, brandy, or other spirit which thus acts as an antidote to the intense local action of the carbolic acid in the stomach. Immediately after this a soft india-rubber tube is passed through the œsophagus and into the stomach. A funnel is attached to its upper end and about a pint of water (more or less, according to circumstances) is poured into the stomach. The upper end of the tube is now depressed and the fluid is syphoned out. This process of washing out the stomach is repeated two or three times and in this way every particle of the poison can be washed out of the stomach. A little sodium sulphate is next administered, a dose of about one drachm dissolved in a wine-glassful of water being sufficient. It may be noted that if the water used for washing out the stomach contains any notable proportion of a soluble alkaline sulphate its efficiency is increased. Moreover the small amount of it which may pass from the stomach into the duodenum and small intestine will be of use in aiding the elimination of part of the poison which has entered or become absorbed into the coats of the small intestine. The addition of a small quantity of sodium sulphate to the water used in washing out the stomach would thus be of distinct value, and the method of treatment advocated above promises to give more favourable results than are usually obtained in grave cases of poisoning by carbolic acid.—*Lancet*, Feb. 17, 1900.

The Influence of Alcohol on the Respiration in Man.

The seventy-sixth volume of Pflügers "Archiv für die gesammte Physiologie" contains an article by Dr. H. Wendelstadt of Bonn in which he gives the results of his experiments on the action of alcohol upon the respiration in several persons with a view of determining its pharmacological value. A small gasometer was closely applied to the mouth whilst the subject was in a recumbent posture and each observation lasted 10 minutes, the quantity of air breathed being read off every 10 seconds. In some of the later experiments the number of respirations was also counted. The temperature of the room was kept as nearly as possible at 65°F. and the experiments were conducted partly in the morning, when no fatigue had been undergone, and partly on subjects who were more or less exhausted after muscular or mental effort. Wine or pure alcohol mixed with sweetened lemonade was administered in moderate doses. Thus in one case 100 cubic centimetres of sherry containing 17 cubic centimetres of alcohol, in another case 15 cubic centimetres of alcohol in lemonade, in another a pint bottle of champagne, were given, usually on a fasting stomach.

In most cases much drowsiness or even heavy sleep was induced. The general results obtained in men who were not fatigued were that in one experiment there was no alteration in the volume of air respired, in nine experiments there was a diminution, and in 54 cases there was an increase after the use of alcohol, but with much individual variation. In 29 cases in which pure alcohol was injested seven showed diminution of the respiratory activity, but when the alcohol was taken in the form of wine only two showed such diminution while the amount of increase in every case where it occurred was greater. The difference, Dr. Wendelstadt thinks, is attributable to the presence of ethereal oils in the wine giving it its bonquet. It must be borne in mind that, although it has been found that the administration of 100 cubic centimetres of pure water does not augment the volume of respired air in a given time, yet the same quantity of water with sugar and lime-juice causes in some instances at least a slight increase. In those who are exhausted by fatigue the effects of alcohol in causing an increase in the volume of air breathed are much more marked. Now, in febrile and debilitated states of the body the condition of the nervous system resembles that of one who is exhausted by fatigue, and hence Dr. Wendelstadt's experiments corroborate the conclusion arrived at by most clinical observers that in such conditions alcohol, especially in the form of wine, having much aroma, is the best stimulant that can be given.—*Lancet*, Feb. 17, 1900.

Therapeutical Uses of Guaiamar.

This substance is the most recent derivative of the phenol group of chemicals. G. F. Butler (*New York Med. Journ.*, September 23rd, 1899) speaks very highly of it. Guaiamar is the glycerol-ether of guaiacol, and is formed by the action of anhydrous glycerine or pure guiacol. It is dry white crystalline powder with a bitter aromatic taste, and is soluble in about twenty parts of water at the ordinary temperature. It dissolves freely in alcohol, is neutral in reaction, and is compatible with quinine, malt, hypophosphites, cod-liver oil, and pepsin. It is antiseptic owing to the liberation of nascent guaiacol which takes place partly in the stomach, but chiefly in the small intestine, and glycerine is also set free at the same time. This decomposition occurs readily at the site of diseased tissues (ulcers, etc.), and in the healthy stomach there is practically no change. It thus does not interfere with normal digestion, while its bitter aromatic qualities give a tonic effect and improve appetite. Like other members of the group, it has a diuretic and diaphoretic action, and is possessed of antipyretic properties. The unbroken skin is capable of absorbing it, and for this purpose an ointment prepared with lanolin is serviceable. In digestive disorders where gastric fermentation (with dilatation of the stomach) is met with, it proves useful owing to the ready liberation of guaiacol under these circumstances, so that bacterial development is checked. Peristalsis of the bowel is also stimulated. The dose is from 3 to 15 gr., to be taken thrice daily. Patients suffering from typhoid fever have been treated with it beneficially, and the

fever and local symptoms were diminished. Where the drug has been taken for several days the stools become odourless practically. The ointment of guaiamar with lanolin (2 drachms to the ounce) applied to painful joints in acute rheumatism greatly diminishes the pain; and as an adjuvant to belladonna ointment in cases of gonorrhœal rheumatism it has proved itself useful in allaying the pain and local inflammation. Its bactericidal and stimulative action have given good results in the event of local applications for bedsores which improved rapidly under treatment. The application consisted of guaiamar and balsam of Peru (aa, 1 drachm) added to 1 ounce of benzoated zinc oxide ointment. In aqueous solution it is nonirritating and can be applied as a lotion to wounds and lacerated parts. It is of interest to note that in the summer diarrhœas of children it has proved especially and immediately beneficial, especially in cases due to bacteria where the intestinal decomposition rapidly subsided and ceased after the use of this drug. Fœtid expectorations (as in bronchiectasis and in the early and middle stages of phthisis) have also distinctly improved under its administration.—*Brit. Med. Journ.*, March 10, 1900

The Treatment of Gout, Rheumatism, and Neuralgia.

Hirschkron (*Wien med. Presse*, August 6th, 1899) states that sodium salicylate, though the most useful drug in acute rheumatism, generally fails in chronic cases. Large doses of salipyrin or salophen sometimes succeed when sodium salicylate fails. In acute gout colchicum allays the pain only if it acts as a sudorific and diuretic; in older feeble patients it causes vertigo, bradycardia, and nausea, and its use should be limited, therefore, to young and active subjects. In acute trifacial neuralgia almost all anti-neuralgic drugs may succeed, though the quickest results are obtained with repeated 15-gr. doses of sodium salicylate, or 7½-gr. doses of quinine. In chronic trifacial neuralgia better results are obtained by certain combinations of drugs, such as phenacetin with quinine, cannabis indica with salicylic acid, chloral hydrate with morphine, and the bromides with morphine or belladona. In occipital and brachial neuralgia probably the only anti-neuralgic drug which is of any use is phenacetin, and in sciatica salipyrin. Cutaneous neuralgias uninfluenced by drugs. The lightning pains of locomotor ataxy yield most promptly to 7½-gr. doses of antifebrin. In intestinal neuralgia ordinary anti-neuralgic drugs are useless, and narcotics must be employed. External methods of treatment consist in massage, electricity, and baths. In acute rheumatism these are of secondary importance. Massage is indicated in chronic rheumatism, sciatica, and gout, in which diseases electricity has very little analgesic effect. Electricity often does good, however, in neuralgia. All kinds of liniments act only through the rubbing. The treatment by applications of mud and "moor" baths is valuable. The best of these is the recently introduced ichthyol-moor mud. When dry it is a fine powder, and before use must be mixed with warm water. It is then boiled and wrapped in a linen bag, in which the painful part is

packed, or is mixed with the bath water. It allays the pain of chronic processes in a wonderful way, and at 86° to 104° F. causes the absorption of inflammatory deposits. In chronic gout the best results are obtained when the mud is applied at lower temperatures not exceeding 77° to 80·6° F. The writer obtained very good results also in chronic neuralgia, the lightning pains of tabes, and pelvic inflammation, the pain being suppressed and the inflammatory deposits absorbed. The analgesic action can be raised by spreading a 30 per cent. ichthyol ointment over the part before applying the mud. On an average thirty to forty "packings" were required in each case. The mud appears to cure partly through the action of the ichthyol on the cutaneous ve[illegible] treatment is simple clean, free from odour, and fairly cheap.—*Brit. Med. Journ.*, February 24, 1900.

Mania a Sero.

A severe epidemic of a new form of insanity appears to be setting in. With *mania a potu* medical practitioners are already sufficiently familiar; now we are beginning to make acquaintance with *mania a sero*. This remarkable affection does not attack the patient but the physician, and the symptoms are particularly severe in those who themselves make the serum. The victims of seromania suffer from extraordinary delusions, under the influence of which they appear bereft of the power of judgment, and mistake their own fancies for facts. It is only on this hypothesis that one can explain the amazing statements made in all good faith by men whose scientific training should have made them capable of seeing things as they really are.

Already we have a serum for nearly every known disease. Each of these, we are assured—by its discoverers—is all but infallible. The announcements are painfully like some of the reports of "great British victories" of which we have lately had more than enough. Having, in imagination, vanquished the *orbis veteribus notus* of disease, it was natural that our bacteriological Alexanders should look for fresh worlds to conquer.

So one fine day the public is thrilled by the intelligence that Professor Metchnikoff has abolished old age. Like all great discoveries it is delightfully simple: You renew the youth of the several organs of the body by injecting a special serum obtained, it would appear, from the corresponding organ of a guinea-pig, and, lo! the frost of old age is thawed to the genial spring of youth. It is true there are still one or two trifling difficulties to be overcome. Some of the serums required have not yet been found, but we read that the Professor's entire section at the Pasteur Institute is working at the problem, and the solution will doubtless be announced before long. So we may all look forward to undergoing a Faust-like transformation when cruel age hath clawed us in his clutch—if the supply of guinea-pigs does not give out before all the serums are discovered. Luckily they breed fast enough to ensure a sufficient supply of the new Pentacle of Rejuvenescence for all.

Old age being disposed of, obviously the next thing was to attack vice. If people cannot be made sober by Act of Parliament, it is still worth while trying whether they could not be made so by serum. It was announced some time ago that an ingenious American doctor had got out of a horse, previously subjected to systematic drugging with whisky, a serum which, injected into the most inveterate drunkard, at once made him fit to be an ornament of the Blue Ribbon Army. Quite lately a similar method has been employed by some French experimenters with the most brilliant results. So there is a prospect of the drink problem being solved by serum. But the publicans need not think their occupation is gone, for as horses have to be made drunk that men may be kept sober there will still be a brisk demand for whisky.

From drunkenness to each of the other deadly sins is but a series of steps which the enterprising bacteriologist will take in his stride. Only, as some of the vices cannot well be inoculated in animals, human subjects will have to be employed. It will doubtless be a comfort to old sinners to be of some use to their kind before they depart this life, by furnishing serum that will serve to produce immunity from their vices in others.—*Practitioner*, March, 1900.

Dangers of Caffeine.

Zenetz (*Wein. med. Woch.*, December 9th, 1899) believes that caffeine is a drug the action of which has been insufficiently investigated. At present different observers have obtained diametrically opposite results, and until the indications for its use are clearer it should be entirely abandoned in clinical medicine. In cardiac and renal disorders the author has found its effect to be usually as follows: With doses of 3 to 4½ gr. two or three times a day, the blood pressure rises steadily, but very slowly, as shown by Basch's sphygmomanometer on the radial artery, and the quantity of urine is increased. Œdema is lessened, but very slightly. Between the fourth and the sixth day patients begin to complain of a sense of constriction in the chest, dyspnœa, and restless nights, owing doubtless to the high blood pressure. In some cases it can be made out by auscultatory percussion that the heart has diminished in size in all its diameters; this is a sign of impending tetanus of the cardiac muscle, and the caffeine must be at once omitted. On substituting sodium bicarbonate the blood pressure falls, and the pulse is softer to the touch, though its rate is unaltered. The quantity of urine diminishes. Caffeine continues to be excreted in the urine for at least ten to fifteen days after the last dose is taken; this proves that, like digitalis, it is stored up in the body, and is excreted slowly. It is therefore quite possible for a toxic dose to collect, and the view that caffeine has no cumulative action is erroneous. The more the kidneys are diseased, the slower it is excreted, and the greater is the danger. Caffeine acts exactly like strychnine on the spinal cord, the striated, and especially the cardiac muscles. It follows that it is absolutely contraindicated (1) in all renal diseases, (2) in arterio-sclerosis and

atheroma and all cardiac diseases secondary to them. Another danger of caffeine is that the experimentally-fixed toxic dose varies enormously with the individual. Zenetz relates 3 cases as examples, in his opinion, of sudden death caused by caffeine. In all, the heart *post mortem* was found so strongly contracted that it could be cut with difficulty. The first was that of a young and healthy woman who contracted the habit of taking 4½-gr. doses of caffeine. The second was that of a young man with croupous pneumonia of moderate severity, who, after taking 3 gr. of caffeine three times a day died suddenly on the third day. The third was that of a woman with chronic parenchymatous nephritis, anasarca, and double pleural effusion, who had been taking small doses of caffeine with apparent benefit for some time intermittently, when sudden and fatal syncope supervened, and the heart was found to be contracted in the way characteristic of caffeine poisoning.—*Brit. Med. Journ.*, March 3, 1900.

CLINICAL RECORD.

Foreign.

CASES OF RAPID RECOVERY FROM GELSEMIUM.

Lydia Webster Stokes, M.D., H.M., Philadelphia, Pa.

Case I. The first collapse in a case of neurasthenia.

When I saw the patient at nine o'clock one evening she was lying propped up in bed, with eyes closed, dark circles under them and face very pale. There was frequent spasmodic jerking backward of the head, when a distressed look would come into the dull eyes.

Miss M. kept exclaiming, "Oh, my head!"—or murmuring in exhausted tones: "I am *so tired!*" or asking: "Where am I?" with a startled and puzzled gaze about the room; her speech was difficult in the extreme, stammering, slow, with contortions of the face and evident mental distress.

The patient's whole head was hot and aching intensely—throbbing in the vertex and occiput—indeed, the throbbing and aching was extreme in the entire spine, and the pain seemed to come through the body to the stomach and abdomen. Her feet and limbs were cold and "felt dead."

I found that Miss M. had been sleeping but two or three hours each night and having frightful dreams. The position she held was one of great responsibility and she was under heavy nervous strain—suffering with much headache, eating very little and keeping up on black coffee—a cup of which had been given her just before I arrived.

I prescribed Gels. 1 m.—which relieved the worst symptoms in an hour and brought sleep soon after. The patient passed the best night she had had for a long time, and the next morning

talked naturally, reporting the spine better, but very sore, while the head felt as if a heavy weight were crushing the top and the occiput still throbbed. The remedy was repeated at noon. In the evening she was in more pain and was flighty and bewildered at times, with stammering speech and jerking head. Gels. 1 m was again given at midnight; it quieted her and gave a fair night, with marked improvement the next day—indeed, the patient said she felt better than for weeks. This continued with better sleep and appetite—so that in four days Miss M. was able to go to the country.

Of course, the case was not cured with these three doses—it remained under treatment for some time—but the rest of the story does not belong in this paper.

CASE II. Grip. One evening I was called to see Miss F., and found that she had been suddenly taken ill in the afternoon; her temperature was 103°, pulse 120, face flushed and hot, head and eyes aching severely—"a beating pain." She had also general aching, with jerking and twitching of the arms and legs. Her hands felt numb, throat was dry and sore. I gave Bell. 1 m., and expected, from previous experiences, to find my patient nearly well by the next day; but on the contrary she had had a wretched night and her head was no better, although the general aching was relieved and the temperature had fallen one and a half degrees. Her tongue was covered with irregular white patches—very peculiar in appearance; she cared for no food or drink, was restless, but seemed dull and heavy and like a very sick girl. I did not change the remedy until evening, when Miss F. was even worse—muttering and moaning—almost "out of her mind" with the intense pain in her head. She said it was worse at the back, but the throbbing seemed to be in the middle of the brain.

Neither hot nor cold water relieved, nor pressure, but it was worse on lying down after sitting up. The temperature was again 103°, the face flushed, but a darker red than before. I prescribed Gels. 30 in water, and next day was pleased to find how quickly it had done its work.

Miss F.'s head was sore, but had no pain, and her temperature was 99°. The following day she announced that she was "all well" and the day after that she was able to go out.

CASE III. Neuralgia. While having a heavy cold Miss L. had been suffering from aching and burning of the eyes. This gradually concentrated into an intense pain in and over the left eye, like a toothache, with shooting pains at times. There was general headache and swelling all around the eye. Spigelia did not benefit—the patient grew very nervous and was nearly frantic with pain. Gels. 5om. relieved entirely in about an hour, the patient slept better than for three nights and the next day complained of only a soreness above the eye.—*Journal of Homœopathics* February, 1900.

CASES OF EPILEPSY.

By H. V. Halbert, M. D.

In the treatment of this dread disease we are handicapped at its very outset by its apparent incurability. For this reason little has been said or done to encourage any systematic treatment. So violent are the symptoms, and so revolting is the disease, that both patients and friends are prone to seek heroic results rather than to pursue any patient scientific measure. It may, therefore, be said that epilepsy has never had half a chance to be cured. Possibly we may yet be obliged to admit that in general it is incurable, but our scientific reputation should receive no honor unless we perseveringly make the attempt. Too much attention is now being given to the study of diagnosis, and too little to the relief of disease. The ability to name a disease is not to be compared with the ability to cure it, and some day, the laity, if not the profession, will realize this.

So far as medical literature is concerned, little has been said favorable to any treatment other than the use of bromides. Authors of prominence, in the neurological field, have given years of study to the etiological and pathological features, without making the slightest suggestion as to the treatment beyond the palliating effects of bromides. In other words, about as little remedial comfort has been offered to this class of sufferers as is given to the insane patients, except to place them behind the bars of restraint. The fact exists that suppression has been the only aim in this unfortunate disease. It is astonishing to realize that with all the advance in medical knowledge no champion of systematic and moderate internal medication has been recognized or received a deserving attention. Even some of the best men in our own school are so bewildered and overcome by the severity of epileptic symptoms that they transgress the theory of our practice and prescribe the bromides. Not long ago a prominent homœopath, in a homœopathic society, made the audacious statement that "Nothing, not even a homœopathic remedy had been found to relieve this disease." If this is a sample of our therapeutic efforts, we might as well fold our hands, in other serious diseases, and admit a failure, without even an honest trial.

So far as I am concerned, I object decidedly to the bromide practice, and fully believe we may expect much from true homœopathic medication. Furthermore, I am able to show, from my record book, many cures which I surely ascribe to the homœopathic remedy, supplemented by whatever adjuvant treatment may have been found necessary. That there are a great many hopeless cases, wherein cortex pathological changes and extreme signs of stigmata exist, I do not deny. This much we must admit may be said of almost any disease. While I may be able to report some perfect cures, I am free to confess to many failures as I must also admit in other diseases. Like other physicians, I report only the cures, for the sake, however, of encouragement in this line of work.

In addition, or, rather in place of the remedy, we must recognize the adjuvant treatment in the consideration of this disease. Without any disregard for the indicated remedy, we must remember that often a perverted function corrected, or a reflex disturbance removed, may eliminate the predisposing cause of the convulsion and allow a natural recovery. At all times we must permit a cure without a remedy, if possible. This is a feature too often overlooked. Then again we must differentiate the different forms of epilepsy. There is a class no doubt, when the osseous structure is depressed, or when traumatism is the chief etiological factor, that surgical procedure is best. The only doubt to my mind is whether the operative result will not, by cicatrical increase, cause a greater cortex disturbance than previously existed.

Further than this we must admit that a certain class of these cases have such pronounced symptoms of epileptic stigmata, or the seizures have existed so long, that the brain disturbance has become so profound as to preclude the possibility of any cure. The following cases are quoted in brief.

Case I. *Post-hemiplegic Epilepsy; Aconite.*—Ernest D., age eight years, was sent to my clinic three years ago, through the kindness of Dr. Shears. He had suffered with typical grand mal epileptic seizures for three or four years; they occurred frequently, as often as twenty times in twenty-four hours; when at his best no day passed without two or three convulsions; the child's mental culture was impaired; his general health was debilitated, and, more than all, he suffered with a pronounced left hemiplegia. He was not able to walk, his speech was greatly impaired, and he was almost helpless.

The physical examination revealed also a very rapid, irritable heart's action, with a rapid, small and irregular pulse. This led me to believe that at some time a cerebral clot had caused the hemiplegic condition, though no history of rheumatic or endocardial involvement was evident. The child had a pronounced expression of anxiety; he was irritable and restless, and was disturbed by the slightest noise. Previous to a seizure, these symptoms were pronounced: The surfaces were dry and susceptible to the slightest cold; he complained of numbness in the left arm, and drawing tearing pains in all the joints.

Aconite was decided upon, and the third potency was given. In the course of a few weeks much improvement was observed. Encouraged by this the remedy was continued for another month. His next report was even more encouraging, and the remedy was still continued. I did not see him again for several months, but then I was surprised to see him walking naturally, and using his left arm perfectly. Not knowing exactly what to do I continued the remedy. In two months more he was still improving. Since that time he has had other intercurrent remedies for whatever symptoms were indicated, but aconite has been the mainstay. Last week the father brought the child to me and I was astonished to see a boy in perfect physical health, using his limb and arm as if they had never suffered paralysis, and, above all, with a history of no convulsions for more

than six months. If this does not point to a cure I do not know what would.

We learn from this that aconite is not alone a temporary remedy to be abandoned when acute symptoms subside, it is called for in any disease, whenever and so long as its chief symptoms are indicated.

CASE II. Mrs. R., aged thirty-five, had suffered with epilepsy for ten years. The seizures were not extreme though they were typical. Her symptoms were identical with those in the first case, though there was no hemiplegia. Aconite was given to her in the third potency, and continued for a long time. At the end of two years she reports almost a complete cure.

CASE III. Miss M., age twenty-six, suffered with hystero-epilepsy of the most pronounced form. She had become a perfect invalid and was gradually developing a condition of melancholia. Fear was a constant symptom, and, more than all, it was a fear of certain definite things which she was sure would happen if she did not observe the greatest care. She was given aconite in the third potency systematically, and is now, in two years time perfectly well.

These three cases are illustrative of the action of aconite on the mental brain, and show that when this irritation is relieved the convulsions disappear. It should also be remembered in cases where fear predominates. That it will show many favorable results in similar cases of epilepsy, I have not the slightest doubt. The trouble is that we expect too much from it after the first few doses.

CASE IV. *Reflex Epilepsy; Belladonna.*—Mr. S., a young man, sixteen years old, was sent to me about a year ago. His seizures occurred every morning and were quite severe. His face bore the evidences of a pronounced acne; he was constipated, suffered with spermatorrhea, and was decidedly despondent. It was observed that his fits occurred every morning when the bladder was full of urine; if he could wake in time to relieve himself they did not occur. Examination revealed a small and irritable urethra, an enlarged prostate, and tight rectal sphincters. Sounds were systematically used to dilate the urethra; rectal dilators relieved the sphincters and a suppository of rhatany and hamamelis was inserted into the rectum every other night to overcome the prostatic trouble; his diet was restricted and in a few months these complicating troubles had disappeared and he was much improved.

Belladonna was decided upon for these reasons: There was a sense of congestion about the head, the face was constantly flushed, with a feeling of heat and a throbbing headache; during sleep he is suddenly startled, often jumping out of bed, with twitching of the muscles. He grinds his teeth during sleep, and is troubled with pains which come suddenly and disappear just as quickly. The convulsions are very violent and distort the body. The two hundredth potency was used morning and night. The spells have gradually decreased in violence and frequency and he is improving wonderfully. I expect a cure. There is no more reason to doubt it than in any other disease where the remedy is so clearly indicated.

CASE V. *Agaracine.*—Miss S., a young lady twenty-four years of age, suffered with peculiar attacks of epilepsy in which the convulsive feature was most pronounced. The loss of consciousness was not complete, but she seemed to be in a state of trance and though she was aware of everything which happened, she had no control over her speech, or any of her actions. The aura was distinct so that she could reach a place of safety when the spells came on; she would froth at the mouth and bite the tongue and then profound tonic spasm would ensue; this would last for five minutes or longer, and would be followed by a most peculiar state of clonic spasms; the abdominal muscles appeared to be most irritated and she suffered such severe paroxysms that it was almost impossible to hold her in bed. The abdomen would contract with such severity that the spasm could not be overcome by firm pressure with the hand. Then would follow a pronounced dyspnea, the eructation of gases, and often vomiting, together with a distressing hiccough. Other violent muscular twitchings would appear, particularly the facial muscles, severe pains in the spine and a general tendency to muscular pains all over the body were pronounced. There was a neurotic family history, particularly on the father's side, and her seizures had existed since childhood.

After a long course of treatment she had gradually grown worse. I could not relieve her in any way until, finally, I gave her the third potency of agaracine. The improvement has been more than was expected; she has less spasms and they are not nearly so severe. After several months' treatment we can see that she is surely progressing toward a cure. This remedy I have used for a long time and with great success where choreaic symptoms complicated the epileptic attack, and particularly when the abdominal muscles were involved. It also relates to gastric perversions, in which violent retching or vomiting attend the seizures. If the above case is carefully studied, it will be seen that a perfect picture of agaracus is presented. I prefer the more active principle as found in agaracine.

CASE VI. *Cicuta virosa.*—Mr. R., a young man twenty-three years old, had been a very close student and was afflicted with severe attacks of epilepsy during his junior years in college. The attacks increased in frequency and severity until they occurred as often as every day.

The loss of consciousness was profound and would last for an hour or more; previous to a seizure he would have spells of weeping and moaning; following this, vertigo would be so extreme that he would fall to the floor long before unconsciousness appeared. During the spasm his teeth would be clinched, and all the signs of lockjaw were evident. The jerkings were confined mostly to the arms and limbs, while the body seemed to be at perfect rest, and they were the most pronounced I ever saw in any case. After the convulsion, he experienced an unusual exhaustion, causing him to remain in bed for two or three days.

I gave him cicuta virosa, in tincture tablets, six times daily, for

several months. He gradually improved and then he was given the third potency for six months longer. He rarely has a spell now; he has resumed his studies and seems in perfect health. The indications for this remedy are observed in the premonitory mental symptoms which take the place of the aura, culminating as they do in a pronounced vertigo and followed by the characteristic seizure in which the spasms are confined entirely to the limbs and particularly to the arms. The next important symptom, when this remedy is called for, is the extreme loss of consciousness and the exhaustion after the spells. I have used this in many cases with uniform good results, when it was clearly indicated. I have not succeeded in every case, to be sure, but in sufficient to warrant encouragement in the use of the remedy.

Verbena hastata is a remedy which I would like to call to the attention of the profession, inasmuch as it has been to me a very valuable remedy in the treatment of epilepsy. Unfortunately we do not know much about the physiological action, nor has there been any perfect homœopathic proving. I have given it in the tincture form, five to fifteen drops, four times daily, and I have the records of several cases actually cured. Never have I seen any bad effects as a result of this extreme dosage. I believe we shall find in this a remedy worthy of our future investigation so far as this disease is concerned.

Solanum carolinense (horse nettle) is another remedy which has given me encouragement, particularly in the extreme and long standing cases. It is given generally in five to ten drops of the tincture, four to six times daily. I have several cases which have been greatly relieved by this remedy.

Many other remedies might be mentioned for the sake of future study. Œnanthe has been used with varying degrees of success; to me it has yielded few favorable results. Hydrobromate of hyoscyamine and the sulphate of duboisine have recently given me much encouragement and I shall study their action in future cases with much interest. I give them in the third and sixth potencies, the same as I would administer other homœopathic remedies. Some day I hope to give some favorable clinical reports after a more extended practical experience with these remedies.—*The Clinique*, Jan. 15, 1900.

Gleanings from Contemporary Literature.

MEDICAL PRACTICE IN EUROPEAN COUNTRIES.

An Address Delivered before the Yorkshire Branch of the British Medical Association.

By THOMAS KILNER CLARKE, M.A., M.D., F.R.C.S.,
Surgeon to the Huddersfield Infirmary; President of the Branch.

When thinking over the possible subjects for an address, it occurred to me that it might perhaps interest you to hear something of the course of medical study and the position of medical men in other countries of Europe. For many years I have taken my annual holiday abroad, sometimes in France, but usually in the northern countries of Europe, and there I have generally made friends with the local medical man or men, if there have been any, and if there has been a hospital I have endeavoured to see something of its working and its practice. Invariably I have met with the greatest kindness and hospitality, and desire to give me every information. Some of this information I propose to put before you. My choice of this subject was influenced, too, by the fact that though there are openings for English medical men abroad, there is not much information readily obtainable how to make use of these openings.

France.

As France probably offers the most numerous openings for the English medical man I will take that country first.

The French medical student has five examinations to pass. The first is in physics, chemistry, and zoology. I may mention that this examination must be passed before the student is allowed to join a medical school. He is obliged to spend a year in a school of science studying exclusively the subject of the first examination.

II. (1) Practical dissection or dissections, anatomy of histology; (2) physiology.

III. (1) Practical examination in surgery (elementary), external pathology, surgical midwifery; (2) internal and general pathology.

IV. Hygiene, medical jurisprudence, therapeutics, materia medica, pharmacy.

V. (1) External and obstetrical clinics. (2) Internal clinics, examinations in practical pathological anatomy, also a thesis consisting of a printed dissertation on a medical or surgical subject chosen by the candidate, who must also reply to questions put to him on the different parts of medical education. In bacteriology, pathology, and also in medicine and surgery, these examinations are very practical.

There are very few medical schools in France not under State control. The students of those which exist are not numerous, and they must go before the official examiners for their degree.

The degree of M.D. is now the only degree in France, and embraces surgery as well as medicine. The degree of *officier de santé*, under which formerly English medical men used to practice at Cannes, etc., is abolished. Every student must do five years of hospital work. The hospital appointments are those of *externe* and *interne* (corresponding to our dressers and

house surgeons), and *préparateur de clinique*, or ward clerks. Lectures are optional, and there is very little control over the students.

A student's expenses for board and lodging run from 90 to 150 francs per month, that is, roughly speaking, from £4 to £6 per month. Speaking generally, a minimum sum of £400 represents the cost of obtaining the right to practise as an M.D. or surgeon in France. In England, a fair estimate at the present time of the total cost of hospital fees (say at Guy's) for instruction and materials, for textbooks, instruments, and examination fees, might be computed at 50 guineas for each of the five years of the curriculum. The examination fees are a heavy item, and will be more after this year. In addition to these is the expense of living—say £10 a month—so that the total minimum cost of obtaining the M.R.C.S. and L.R.C.P. is something over £850.

The fees of general practitioners are not high. It is usual to be paid for each visit, but it is by no means unusual to contract by the year. For consultation with prescription, the fee ranges from 1 franc to 2 francs, generally 2 francs (1s. 8d.) in the country and from 3 francs to 5 francs (2s. 6d. to 4s.) in the town. As a medical man's name becomes known, he charges 10 francs; consultants charge from 20, 40, or even 60 franks; the average is from 40 to 60 francs. Operation fees vary, and, as in this country, the surgeon cuts his coat according to his cloth, but they are very high—higher than here. In the centre and the south of France the income of a general practitioner in the country is from £200 to £240 a year; in the industrial centres, the north of France, and the suburbs of Paris, perhaps £800; £3,000 is the highest income of any general practitioner in Paris. There are no assistants. Mileage is charged at 1 franc a kilometre. No medical man is allowed to dispense his own medicines, unless he lives at least 4 kilometres from a chemist. The social position is much what it is here, dependent entirely upon the individual.

Obstetric work, except in the largest towns, is mostly done by *sages femmes*, that is, midwives, and even in the largest towns the midwife attends some of the best people. The midwife's fees vary from 2 francs to 100 francs in the country, and from 100 to 1,000 francs in the towns. The midwife is recognised by the State.

Unqualified practitioners are forbidden by law, but it is not worth while putting the law in motion, for if convicted, only a small fine is imposed. The Syndicate of Masseurs and Magnetisers of France are petitioning that a law should be passed giving them a legal right to practise their art, as they modestly put it, on the sick; and certain Socialist deputies are demanding that all quacks should be registered as medical practitioners. Medical aid societies do not exist in France.

The proportion of doctors to population for the whole of France is 3.48 per 10,000, or say 1 to 2,800. The proportion in England is 1 to 1,400 so that medical men are just twice as numerous in England.

Pursuant to decrees passed on July 25th, 1893, medical men who possess a foreign degree of Doctor of Medicine, and who wish to obtain the French

diploma of M.D., may obtain a partial or total exemption from the quarterly registrations ("inscriptions"), and a partial exemption from the examinations required for this diploma. The exemption can only apply, however, to three out of the five examinations required.

BELGIUM.

Belgium is of some interest to us because of the facilities afforded to foreigners in the attainment of the degree of M.D. Brussels. The Examining Board of Brussels is most obliging ; no foreign language is required, as the examiners will examine the candidate in English if he so wishes it, and the candidate may take anatomy and physiology at one time, materia medica and therapeutics at another, and pathology at a third, or be examined in the whole range of medical study at one examination.

The examinations are practical. The candidate must dissect and operate before the examiner, and state his diagnosis and treatment at the bedside. The examination is rather stiff in pathology, materia medica, and therapeutics, but there is no microscope work and no museum specimens. Most of the candidates go to Brussels for a month or two before the examination and coach.

Lodging and board (the best) cost some £2 a week ; coaching from £5 to £10 the month, and the fee for the combined examination is 22 guineas. The native student must pass at least six years in medical and allied studies before he can take his degree, and two of these years must be spent in hospital work. He has seven examinations to pass, of which two are in natural sciences. He is examined in logic, moral philosophy, elementary zoology and elementary botany, experimental physics, general chemistry, elementary mineralogy, geology, and physical geography ; the other five examinations relate directly to medical and surgical subjects, including, amongst many others, embryology, pharmacodynamics, mental diseases, and ophthalmology. The hospital appointments are two—*aide de clinique* and *chef de clinique*—but they are not compulsory. The lectures and examination fees, which include admission to hospital attendance, amount to 1,500 francs (£60). In addition to this the student pays for courses of practical instruction fees varying from 15 francs to 30 francs, and amounting altogether to 200 francs. A student's expenses outside board and lodging, which amount to £1 a week or less, and textbooks, are thus some £68, not a large sum compared with our corresponding fees in England, which, as I have mentioned, amount to something over 200 guineas. He is not obliged to remain at one school or one university ; only the examination is central. When qualified he commences practice on his own account. The medical assistant is unknown in Belgium ; few medical men could afford one, for medical fees and income are very low. Socially he ranks with the other professions.

The fee for a visit ranges from 1s. 3d. in the country to 2s. 6d. and 4s. 2d. in the town, and consultations from 10 francs (8s. 4d.) in the country to 20 francs or even 50 francs in town. The fees for operations vary, of course, from £20 to £40, or even £80 or more. Mileage is reckoned in Luxem-

bourg, where the distances traversed are great. The average incomes of a country medical man run from £160 to £240 a year and in the towns from £240 to £400. Doctors do not as a rule dispense their own medicines. Permission to practise can only be obtained by foreign practitioners from a Central Board appointed for the purpose. The duty of this Board is not only to inquire into the facts of the case with a view to ascertain that applicants hold proper diplomas, but it has also to test their knowledge. It is necessary further that the Board should be convinced that such applicants possess an exceptional degree of knowledge, and that there are grounds justifying the Government in giving them special permission for the good of the country.

Italy.

In Italy authorisation may be granted by one of the Royal Universities to foreigners, who however, can practise without this when called in from abroad to attend special cases or if they confine their practice to foreigners.

Spain.

The Spanish student of medicine seems to have rather a harassing time. The medical course consists of twenty-two series of lectures in medicine proper and four series of preparatory lectures on natural history, natural science, and chemistry. These lectures are divided into seven terms of eight months each, beginning with anatomy and ending with hospital work and clinical lectures. University students during their two final courses are bound to attend for two hours each day at the hospitals. House-surgeons are appointed after competitive examination, and have, in addition to the ordinary work, to compile data for statistics and look after the instruments.

The student's fees amount to 30 guineas. Except in the large towns it is usual for the family attendant to have a yearly contract – sometimes he is paid in money, more often at harvest time in corn, etc. Fees vary (with the size of the town and the status of the medical man) from 10d. to 8s. 4d. a visit. The consultant's fee varies from 7s. 6d. to 37s. 6d. There is no mileage tariff, but a minimum fee for an out-of-town visit from Cadiz within a radius of 25 kilometres (14 miles) is £3 15s., provided the medical man is able to return to Cadiz the same day; the maximum fee is £7 10s. From 3,000 to 4,000 pesetas, that is, £120 to £180, is the usual general practitioner's income in towns; in the country districts the man who makes £100 a year is well off.

Sweden.

I do not think any of you would choose Sweden as a place for medical study for the reason that the curriculum extends over eight years, but as a playground Sweden has no equal. If you are fond of fishing and shooting or boating in the midst of beautiful scenery and amongst some of the most hospitable people in the world, go to Sweden. You will get it all there; you will also find scrupulous cleanliness and generally good cooking, and all at about one-third of the cost for which you would get the same in the British Isles. The language is not difficult; anyone could very quickly

learn enough to travel out of the beaten tracks. In the beaten tracks nearly every well-dressed man you meet speaks English. The Swedes say they can learn our language in four weeks, and from my own personal experience I can believe them. Anyone who speaks Swedish can travel with comfort in the neighbouring countries of Denmark and Norway, the three languages are so much alike. He may travel also on the coast line of Finland, where most of the people use Swedish as their native tongue.

I have visited the Swedish hospitals a good deal, and have seen as good surgery there as I have seen anywhere—aseptic and antiseptic surgery is carried out with great detail and care, for time there seems to be no object. There is no word in the language corresponding to our "immediately"; "*strax*," which is the nearest equivalent, means anything from ten to thirty minutes.

The students' course is a severe one; the duration of the course of study is over eight years. From one to one and a half years are given to natural science, another three and a half to four years are spent over anatomy, physiology, histology, general pathology, and history of medicine. After passing in these he must spend another four years in the higher branches of his profession, including ophthalmology, syphilology, psychology, and forensic and State medicine, and these examinations are both practical and theoretical.

There are three examinations. After passing the second, which is called "the Medical Candidate Examination;" he begins hospital attendance, which is compulsory. I need not, I think, go into details, but it would be impossible for a medical student in Sweden to present himself for his final examination without a very practical experience of the different branches of his profession.

Medical education is very cheap. There are no fees for lectures or hospital attendance, but for each of the three examinations the student pays an entrance fee of 20 kroner, amounting to 22s. He also has to pay from 12 to 25 kroner a year as entrance fee, and subscription to the "Students' Association." Board and lodging are also extremely cheap. As soon as the student is qualified he goes into private practice. Assistantships are unknown. Midwifery is mostly done by women who are qualified and recognised by the State. The fee of the private midwives ranges from 3 to 5 guineas. The village midwife has a salary paid by the State, and she is obliged to make an annual report of her work to the State. Any cases of puerperal fever are looked into and if she should have had, I think, three cases in the year, her certificate is withdrawn (for a time).

The medical men never dispense their own prescriptions. As regards fees, I think I may say that the custom of contracting by the year is very general; in cases where there is no contract the usual fee for a visit in the towns is 5 kroner, and for a consultation 10 kroner; in the country the fee is 5 kroner within a 3-mile radius, over that radius mileage is always paid at the rate of 6d. a mile. The average income of a general practitioner in

the country is from 6,000 to 8,000 crowns, that is, roughly £300 to £400; in the town from £500 to £650.

Medical aid associations are beginning to appear. In Sweden the only facility granted to foreigners is that licensed practitioners may possibly be granted by the Chancellor of the University a certain reduction of the time required of native students before they can obtain a license. The authorities do not, for the moment, see any reason for according further facilities in this respect.

Norway.

In Norway all students, whether for law or medicine or any other profession, are required to pass two matriculation examinations, one in arts, the other in philosophy. The student of medicine has three other examinations to pass: the first, after from two years and a half to three years study is the usual examination in botany, zoology, chemistry, theoretical and practical anatomy, physiology, etc. The second examination which is passed three years and a-half to four years after the first, is severe. The subjects are pharmacology and toxicology, general pathology and pathological anatomy, special medical pathology and therapy, skin diseases, syphilis and leprosy, and ophthalmology. In addition the candidate has to write an essay discussing some question connected with one or other of these subjects. The third examination is passed half to one year after the second, and embraces practical medicine and surgery, the diseases of women and children, obstetrics, surgical operations (on the cadaver) and surgical anatomy, hygiene, and medical jurisprudence. An essay must also be written on some given text taken from the subjects included in this examination. Hospital attendance, which does not count until after the student has passed his first examination, extend over four or five years. Generally the student spends the whole of his course of study at the University and at the hospital in Christiania, but residence is not compulsory until after he has passed his first examination. Occasionally a student is appointed as assistant to a surgeon or physician at the hospital, but that is not often the case now; it happens now and then that in the time between the second and third examinations a student may act as assistant to a general practitioner, but this is rare.

The only fee the student has to pay is 20 kroner on putting his name down for the first examination. There are no fees for lectures or hospital attendance. Books, entertainments, clothes, etc., cost about £26 a year, and board and lodging another £40—say £70 a year for everything. Medical men take a very high social position in Norway. In the country a fee is generally paid for each visit, but in the towns the custom of yearly contracts is more common, from 50 kroner to 500 kroner, that is, roughly speaking, from £3 to £25 a year being the usual rates. A general practitioner's usual fee for seeing a patient at his own rooms in the towns is from 2s. 2d. to 5s. 6d. (some specialists ask half a guinea), and in the country from 2s. 2d. to 3s. 3d.

Operation fees in towns are from half a guinea to 25 guineas; in the country 5 guineas is the maximum fee. The country practitioners have large districts, and there is a recognised mileage tariff, a visit at a distance of

1	kilometre	is charged	4	kroner (4s. 4d.)
5	„	„	5	„
7	„	„	6	„
8.5	„	„	7	„
10	„	„	8	„

beyond 10 kilometres 2 kroner for each 5 kilometres.

The average income of the general practitioner is in town 5,000 kroner—£280, in the country £200 or a trifle more. Only in country districts where there are no chemists do medical men dispense their own prescriptions. Midwifery is very much, I believe almost exclusively, practised by women, qualified and recognised by the State. The fee varies from 5 kroner to 40 kroner in the town; in the country it is seldom more than 5 kroner, but the country midwife is subsidised by the State. She receives from 160 kroner to 240 kroner a year, half paid by the *Amt* (country or district), and half by the *Herad* (parish).

Quacks are allowed to practice under slight restrictions; they must not call themselves doctors; they must have lived in the country at least three years, and must not have been roaming about, and they must have a clean record as far as the police court goes. They are not allowed to attend people suffering from any acute infectious disease, nor to use such medicines as can only be prescribed by qualified men: poisons, I suppose, such as strychnine, etc. In the north of Norway—in the Trondhjem district—there are some bone-setters. Patent medicines can be sold by the chemists, but if containing poison only on the production of a doctor's prescription.

There are 800 medical men in Norway 650 of whom are members of the Norwegian Medical Association. The Association has many local divisions, and its object is to keep up the standard of the medical profession and secure its interests. There is also—and this is rather sad—a doctors' burial club. The club system is prevalent.

There is no general permission to foreigners to practise in Norway without passing the prescribed examinations, but the Government has the power of giving permission in individual cases to those who produce satisfactory evidence that they possess the requisite knowledge.

Finland.

The student of Medicine in Finland has a prolonged course of study; two years (if the student is diligent, as my informant remarks) are usually spent in preparing for the first examination, called the Medico-Philosophy Examination; during this time he does some months' practical work in the chemical, physiological, zoological, and botanical laboratories. He then passes on to prepare for his second examination, the examination for the Bachelorship of Medicine; he attends a course of dissection and physiology, and a three months' course at the Physiological Chemical Laboratory. Two years are generally thus occupied; and then comes the final stage, that of

preparation for what is called the Licentiate Examination. During this stage the student (who has already the title of M.B.) attends the usual hospital practice and various clinics—three months at the venereal clinic, three months at a lunacy hospital for the mental diseases clinics, and so on—in all thirty-seven months in eight different hospitals.

It usually takes the M.B. four years to pass the Licentiate Examination which is very practical. He is now allowed to practise, and is eligible for any town or State appointment. To obtain the title of Doctor of Medicine and Surgery he need only write some scientific essay, and be examined on it; altogether the student has to pass some eight years as in Sweden before he is allowed to practise in Finland.

Attendance at a foreign university or school of medicine is accepted, but foreign degrees do not exempt from any part of the examination. There are no hospital fees, and no examination or lecture fees after passing the M.B., and living costs from £2 to £5 a month in the university town.

Once he has taken his degree he holds a very respected social position. Assistants are unknown. The fees in the town are not bad. Visits are charged from 2s. 6d. to 12s. 6d., and operations from 12s. 6d. to £31 5s. or more. In the country when journeys are very long (the nearest doctor to the place where I have been fishing the last three years lives some fifty miles away), 10 marks (8s. 4d.) for 10 kilometres is the usual tariff. It is only in the very largest towns that the general practitioner pure and simple exists; over the rest of the country every doctor has some appointment, either State, town or country, or in connection with some large manufactory, and gets a yearly salary of from £80 to £400; £1,200 a year marks the maximum income of any general practitioner; a very few specialists reach £2,000.

Medical men never dispense their own prescriptions. Midwifery is done by women, though in intricate cases the physician may be called in. Midwives are recognised, and have to pass a State examination; they are allowed to use instruments. Midwifery fees range from 1s. 8d. to £4.

Unqualified practice is illegal, but of course in the sparsely populated country districts there are many quacks, and against them the law is not put in force except for malpractice. No patent medicine can be sold except such as have been analysed and passed by the State. Medical aid associations are unknown, and for the most part there is a high standard of medical etiquette.

Russia.

Of the medical profession in Russia I have been able to obtain very little information. Students are obliged to remain at the university and hospital during the whole of their student career, and, if they have the means, usually take some post-graduate course, either at home or abroad before practising. It is much the custom in Russia for the family doctor, who is usually the confidential friend of the family, to contract by the year for his services; there is no fixed tariff of fees. Only in widely-scattered districts where there are no chemists do doctors dispense their own prescriptions.

Midwives are State examined, and are compelled by law to call in a medical man if the confinement is requiring instrumental help. Quacks are strictly repressed ; on the other hand, medical aid associations have recently become very numerous.

SERVIA.

The Servian who desires to practise medicine goes to some neighbouring country—Russia, Germany, Austria, or even France and Switzerland—to take his degree there. Those who have only obtained the degree of M.D. without having acquired at the same time the right to practise in the country where they have obtained their M.D., are obliged to undergo an examination before a Medical Board at Belgrade, only after they have passed this second examination are they allowed to practise medicine in Servia. Socially they take a high position. The usual custom is to be paid by the visit, but occasionally an annual payment is agreed upon. In the towns the usual fees are, for general practice, 2 to 5 dinars (a dinar is 9½d., practically a franc) ; consulting fees 10 to 12 dinars ; in the country 1 to 2 dinars, and 8 to 10 dinars for consultations ; operation fees from £1 to £12, with mileage fees of about 1 dinar a mile. The average income of the general practitioner in the country varies from £240 to £400, and is a trifle higher in the town, but very rarely indeed over £400. Doctors only dispense their medicines in the very rare places, where there is no chemist available. Nearly all midwifery is done by medical men ; 20 to 80 dinars is the usual fee. Unqualified practitioners are very severely dealt with, and medical aid associations are unknown. In the whole of Servia there are but 184 medical men, and of these 122 are paid by the State, having some official position either in the army hospitals or prison staff or on the railways ; 32 are *medici de communité*, that is, Poor-law doctors, and only 30 rely exclusively on private practice. There is one doctor to every 12,567 inhabitants.

GREECE.

The Grecian student of medicine is, I believe, almost if not quite the only medical student in Europe who is not required to pass a preliminary examination in arts and classics. Perhaps as a consequence of this, the standard of professional etiquette is not high, and advertising in the daily papers prevails to a deplorable extent.

The duration of medical studies is four years and nine months. At the end of his second year the candidate is examined in chemistry, physics, zoology, and botany ; at the end of the fourth year there are two examinations for the diploma of M.D., the first written, the second *viva voce*, and these examinations extend over the whole range of medicine, surgery, and midwifery. These examinations are not practical, that is, there is no clinical or laboratory work, no operations on the dead body. In his third year of study the student is obliged to follow the hospital work as a simple spectator ; in his fourth year the professors of clinical medicine and surgery give him patients to examine and treat under their directions. Hospital appointments for students are very few ; each surgeon has his *interne*

(resident house-surgeon), whose emolument is from £4 to £6, or less, and seven *externes* (dressers) who receive no pay. After the student has got his diploma, he is obliged before he can practise to spend nine months in practical work in the out-patient department under a special professor and four assistant physicians. There are no hospital or lecture fees. The student pays the Government study tax (*διδακτικά τέλη*) £40. The examination fees are £4, and for the diploma £4 is paid. The only other expenses in addition to those of board and lodging are expenses for medical books, etc. In Athens the average expenses of a student are from £6 to £10 a month. The student is obliged to spend the whole of his four years and nine months study at the University and in hospital work.

There are no assistants to medical men as in England. Generally medical men are considered as belonging to the best class of society. Sometimes they make yearly contracts, but they are usually paid for each visit; from 3s. to 6s. is the usual fee in general practice, but there are some who are satisfied with a couple of drachmas, that is, 1s. 3d. for each visit.

The consultant's fee for a consultation at his own house is 10 drachmas—that is, about 6s. Private operations are well paid, but they are few; patients prefer the hospitals because they can go there gratis, or pay very little. In the large towns—for example, Piræus (60,000 inhabitants)—£250 to £300 is as much as any general practitioner can make. In the country medical men make much less, but, as my informant says, "they belong to the country and do not depend solely on medicine for a living." The law forbids the general practitioner to dispense his own medicines except where there is no pharmacy. Midwifery is mostly practised by ignorant midwives; some of them are qualified, by a six months' course of instruction, and recognised by the State; but their knowledge and practical ability are very poor, and puerperal disease is of very common occurrence. In difficult labours the obstetrician is called in and gets a fee of from £3 to £9, according to the social standing of the patient. There are some laws and restrictions against unqualified practice, but they are never enforced by the State. Foreigners holding a diploma other than Greek are allowed to practise after passing a practical examination at the hospital, and those who speak French or German are allowed to be examined in these languages; the fee is 100 drachmas, but no foreigner could possibly practise in Greece without a knowledge of the Greek language.

There is one characteristic common to the medical men of all countries I have visited, and that is their good fellowship—always ready to do anything for one's comfort, to show one anything they have to show, and give one any help or information in their power. I owe them my thanks for numberless acts of kindness, and am glad to make this acknowledgement before a body of their English *confrères.—Brit. Med. Journ.*, Feb. 17, 1900.

RADIOGRAPHIC RESEARCHES ON THE TOPOGRAPHICAL RELATIONS OF THE BRAIN, THE FRONTAL AND MAXILLARY SINUSES, AND THE VENOUS SINUSES OF THE DURA MATER TO THE WALLS OF THE SKULL.

By Dr. PAUL REGNIER,

Professeur Agrégé, Surgeon to the Hôpital Lariboisière;

AND

Dr. JULES GLOVER,

Ancien Interne de la Clinique oto-laryngologique de l'Hôpital Lariboisière.

The present paper is an account of a research undertaken by us in which radiographic methods were applied to the investigation of the anatomy of the skull and the face. The observations were made in the Radiographic Laboratory at the Ecole Pratique of the Faculty of Medicine of Paris. 14 radiographs, together with our memoir, were submitted to the Paris Academy of Medicine at the meeting held on August 10th, 1897. Reproductions of three of our radiographs will be found in the *Journal des Praticiens* of Sept. 4th, 1897, and also in *La Radiographie*. The investigations led us to the following results: —

1. Regarded in its surgical aspect the topography of the skull and brain may be studied by radiographic methods, allowance being made for the fact that the views which are obtained by the processes in question inevitably present some very slight distortions. By means of radiography it is possible to see the brain through the skull. More than that, an important guide-mark in the study of the topographical anatomy of the brain and skull is furnished by the circumstance that in the photographic plate it appears to be possible to superpose the outline of the cranial sutures on the outline of the fissures which separate the cerebral convolutions from one another. By these methods the relations between the cerebral convolutions and the walls of the skull, so interesting from the point of view of surgical intervention, can be studied with almost no preliminary preparation which might have the effect of materially modifying the exact relations between the brain and the skull. Similarly we may point out that on the radiograph of the cerebral convolutions, viewed through their bony covering, the outlines and the form of the lateral ventricle of the cerebral hemisphere are very exactly traced.

2. The immediate relations existing between the venous sinuses of the dura mater and the skull, and in particular those existing between the lateral sinus and the skull, may be defined both in the child and in the adult. Injections of the venous sinuses of the dura mater made with liquids which ultimately become solid, and which hold metallic substances in suspension, as well as some other devices to the same end, have enabled us to see these sinuses very clearly through the bony wall. Our radiographs show the lateral sinus, as our researches were particularly directed to this important point of surgical anatomy.

3. We have also been able to study, especially in dried preparations, the extremely variable extent and form of the cavities and bony cells of the mastoid process, as well as of the maxillary, frontal, and sphenoidal sinuses and of the ethmoidal cells.

4. It has been possible for us to recognise in the infant and in the adult the exact position with reference to the outside of the skull occupied by the petrous portion of the temporal bone and the three successive levels of the base of the skull. We have easily obtained, in specimens covered with

their soft parts, the opaque triangular outline of the base of implantation of the petrous portion on the squamous portion of the temporal bone, as well as the outline of the three successive levels of the base in their exact relation to the external wall of the skull.

Mode of Preparation of the Specimens and Method of Procedure.

For our anatomical preparations we used sections of the head through the middle line with the view of proportionately diminishing the number of bony surfaces, of which there would be too many if the entire thickness of the head had to be traversed by the cathodic rays. One must be careful to select young subjects in whom the cranial sutures are not yet ankylosed. Before making the section of the head in the vertical and antero-posterior directions the specimen was injected with formol introduced by the carotid artery. This arterial injection was repeated two or three times at intervals of one or two days with the object of hardening the brain without appreciably changing its shape or size. The soft parts covering the skull and face were carefully removed and the antero-posterior section of the specimen was not made until after the lapse of a period of three weeks. The cerebral hemisphere, hardened *in situ*, was then carefully removed from the skull, freed from its pia mater, and replaced in its former position in the skull. These manipulations cannot alter the mutual relations of the brain and the skull provided that they are kept within the narrowest possible limits. On this account we abandoned the idea of making casts of the brain, for in them the conformation of the part is more liable to become altered, even when it has been hardened by formol or some other dehydrating agent. The brain must be freed from the pia mater if we wish to have the convolutions visible on the photographic plate, for when it is covered by the meninges the representation of it is less sharp. Moreover, it is advantageous by a vertical section to get rid of the convolutions of the internal aspect of the cerebral hemisphere, if one wishes to avoid having on the plate any confusion between the convolutions of the internal aspect and those of the outer surface of the hemisphere. The injections of the venous sinuses were made with bronze powder held in suspension either in a solution of wax in alcohol or else in tallow. A still better result is obtained if the course of the sinuses is indicated on the specimen by means of small metallic points—pins, for example—which come out deep black on the plate. Our radiographs of the dried skull of the adult and infant deserved particular attention, for in them the extent and the conformation of the bony cells were very plainly to be seen, both at the level of the mastoid process and at the level of the bony sinuses of the face. Our various radiographs were taken with Colardeau-Chabaud cylindrical focus tubes. The distance from the tubes to the sensitive plate was always 45 centimetres (18 inches), a distance which enabled us to obtain sharp pictures. The length of the exposure varied according to the state of the vacuum of the tube, from a few minutes to 10 and 40 minutes.

Inferences and Applications of our Researches to the Methodical Study of the Surgical Anatomy of the Brain and Skull.

The superficial situation of the venous sinuses of the dura mater, of the cells of the mastoid process, and of the frontal and maxillary sinuses, and their definite relations to the external surface of the skull, which give easy access to them in a host of surgical interventions, are sufficient to show, on the one hand, the ease with which it was possible to obtain the results at which we have arrived, and, on the other hand, the practical importance which these results seem to us to possess. If a certain number of radiographs of different anatomical specimens are taken, as they were by us, and if they are compared with one another, it is easy to appreciate all the anomalies and variations of the size and shape of the frontal and maxillary

sinuses, and this comparison, being made with photographs, is much more exact than the method ordinarily followed in anatomical treatises—namely, the comparison of drawings of a series of sections cutting the bones of the face in all directions. In many of our preparations the lateral (venous) sinus formed a part of the mastoid process, a fact which was recognised long ago but which had not been so clearly demonstrated without resorting to special methods of preparation. In some specimens it corresponded to the anterior part of the mastoid or even to its centre, or, finally, in general, to the posterior fourth of the process. Allowances have to be made for some distortions of the picture, and, this being done, when radiographs obtained from a child are compared with those obtained from an adult it will be seen that in the normal state the lateral sinus is less closely connected with the mastoid process in the adult and that this important venous channel seems to lie at a progressively greater distance from the bony process in proportion as the age of the subject advances from infancy upwards. At the level of the mastoid process not only are the cells of the body and of the tip very clearly recognisable according as the bony tissues contain air or are dense in their texture, but one can also easily make out certain mastoid cells which often extend backwards and downwards into the diploë between the two tables of the occipital bone. One sees also cells of still greater interest from a surgical point of view which occupy a surface of considerable extent immediately above the external auditory meatus. Moreover, if the tip of the petrous bone be removed from the preparation by a section passing internal to the tympanic cavity it will be easy to see the antrum and the tympanic cavity. In some radiographs the petrous bone is, in fact, so transparent that the orifice of the internal auditory meatus can be seen. It is unnecessary to refer in detail to the anatomical and surgical interest attaching to these results, which we were the first to obtain by utilising the transparency of the petrous bone under radiographic examination. The question is one of special importance at the present time, when so much attention is being bestowed on the operative details of the combined trephining of the mastoid process and the tympanic cavity in complicated suppurative otitis media.

With reference to the views of the cerebral convolutions obtained through the bones of the skull it may be said that a minimum distortion of the image can be reckoned on when care is taken to have the incidence of the cathodic rays exactly vertical to the anatomical preparation and consequently to the sensitive plate; in the next place the tube ought to be at a sufficient distance (50 centimetres—i.e., 20 inches—as we have said) in order that the cone of emergent rays may present its minimum of divergence. With plates taken with these precautions (and with such plates only) the topography of the brain and skull in their various aspects can be studied in the adult and with still more facility in the child.

Notwithstanding the undeniable value of the simple method by the insertion of pins through the walls of the skull into the cerebral convolutions practised long ago by Gratiolet and Broca, who were the first to study the topography of the brain and skull, it is none the less true that it would be extremely interesting to resume these complicated investigations by the aid of the wonderful method which, as we now recognise, enables us to obtain a permanent and detailed representation of the brain, irregular in form as it is, even through the bony structures which contain it. We are convinced that our pioneer researches will be the prelude to others.

The Application of our Researches to the Clinical Exploration of the Brain and the Osseous Cavities of the Face.

On examining a child's head with the fluorescent screen it is sometime possible to perceive a clear patch corresponding to the cavity of the laters ventricle, especially when this cavity is dilated by more or less serou

effusion in the case of sufferers from hydrocephalus or meningitis. Referring to the results obtained on the anatomical preparation by taking radiographs of the brain through the skull, a method which gives a detailed representation of this ventricular cavity, it is obvious that a radiograph taken in such a case from a living child will afford more exact information than a mere examination with the fluorescent screen would do. One of us with M Rémy, using the fluorescent screen, has seen in the head of a child suffering from meningitis a clear path corresponding to the median portion of the brain. This patch exists normally in young infants, but its transparency is certainly more perceptible in the pathological state when the ventricle is dilated with fluid.

In conclusion, we will say that it is easy by mere examination with the fluorescent screen to verify the transparency and the condition as to emptiness of the frontal and maxillary sinuses, and perhaps even of the mastoid cells, with much more exactness than by making use of the ordinary electric light. Instead of employing a powerful light introduced into the mouth for the illumination of the maxillary sinuses, or applied to the upper and inner margin of the orbit for the illumination of the frontal sinuses, we recommend having recourse to cylindrical focus tubes. With this object, and in order to simplify the manipulations, the tube is fixed on a small and light stand made of ebonite, or even of wood, and the observer wears caoutchouc gloves to protect himself against shocks from the current. The tube can now be brought near to, or removed from, the patient's head until the proper distance is found without causing the patient any inconvenience or danger. In the examination of the face all the cavities become visible at the same time.—*Lancet*, Feb. 24, 1900.

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THERAPEUTICS AS A SCIENCE.

V.

(*Continued from* Vol. xix, No. 3, p. 96.)

IN our last we could not say whether Hahnemann took the hint or not from Haller as to the necessity of proving medicines on the healthy. The uncertainty is not removed by the following note to § 108 of the *Organon:* "Not one single physician, as far as I know, during the previous two thousand five hundred years, thought of this so natural, so absolutely necessary and genuine mode of testing medicines for their pure and peculiar effects in deranging the health of man, in order to learn what morbid state each medicine is capable of curing, except the great and immortal Albrecht Von Haller. (Quotation from Haller) But *no one, not a single physician,* attended to or followed up this invaluable hint." Hahnemann's language does not express his indebtedness to Haller. On the contrary the impression left on one's mind by a perusal of the above passage is that he had arrived at the idea of proving medicines in health independently of Haller, and this is confirmed by the fact of his not having mentioned the name of Haller in his earlier writings. It should be noted that he published a translation of Haller's Materia Medica in 1806. We should like to know if he made any comment on the passage in the preface he quotes so approvingly.

Whatever the fact about this matter, the next the fifth step was the most important in as much as it gave Hahnemann the first glimpse of the law of similars. This was the actual trial of a medicine on himself in health. The medicine tried was Cinchona or China as it was called in his time. He did so in the year 1790 when translating Cullen's Materia Medica. Cullen ascribed the efficacy of Cinchona in intermittent fevers to its astringent and tonic properties which have a strengthening effect on the stomach. To this Hahnemann adds the following note by way of refutation of the explanation.

"By combining the strongest bitters and the strongest astringents, one can obtain a compound which, in small doses, possesses much more of both those properties (astringent and tonic) than the Bark, and yet no specific for fever will ever come of such a compound. This the author (Cullen) ought to have accounted for. This will perhaps not so easily be discovered for explaining to us their action, in the absence of the *Cinchona* principle.

"Let us consider the following:—Substances such as strong coffee, pepper, arnica, ignatia, and arsenic, which cause a kind of fever, extinguish the periodicity of intermittent fevers. For the sake of experiment, I took for several days four drachms of good cinchona bark twice a day; my feet, finger tips, &c., first grew cold, I became exhausted and sleepy; then my heart began to palpitate, my pulse became hard and rapid; I had intolerable anxiety, trembling (but not rigor), prostration in all my limbs; then throbbing in the head, flushing of the cheeks, thirst, and in short all the ordinary symptoms of intermittent fever appeared one after another, but without actual febrile rigor. In a word, even the special characteristic symptoms of intermittent fever, dulness of the senses, a kind of stiffness of all the joints, and in particular the disagreeable numb sensation which seemed to be located in the periosteal covering of all the bones of the body, made their appearance. This paroxysm lasted two to three hours each time and returned when I repeated the dose, otherwise not. On leaving off the drug I was soon quite well."

Dr. Bradford tells us that "the next note, occurring but a few pages beyond, in the German translation, is as follows: 'Had

he (Cullen) found traces in bark of a power to excite an artificial antagonistic fever, he certainly would not have persisted so obstinately in his mode of explanation.'"

Further on Cullen has the following: "Although I would not rigorously insist on the employment of a single dose near to the time of accession, yet I am strongly of opinion, that the nearer the exhibition is brought to that time, it will be the more certainly effectual. To explain this not commonly understood, we must remark, that the effects of the bark are not very durable. I have had opportunities of observing that a considerable quantity of bark given, was not sufficient to prevent a relapse in a few days after." On this Hahnemann has the following note: "How comes it that the effects of bark are so short-lived, as is indeed the case, if it be not true that bark, besides the astringent and tonic properties ascribed to it by writers, especially by the author (Cullen), possesses another, (that of exciting fever of a peculiar kind)?"

We have given these notes *in extenso* because they contain not only the first proving of medicine in health by Hahnemann, but also his first idea of the principle of similars, and therefore possess the deepest historical interest for the science of medicine. "With this first trial," says Hahnemann in the Preface to his article China in the *Materia Medica Pura*, "broke upon me the dawn that has since brightened into the most brilliant day of the medical art." And well has Dr. Dudgeon said that the discovery of the fever-producing property of Cinchona bark "was to him what the falling apple was to Newton, and the swinging lamp in the Baptistery at Pisa to Galileo." His vague surmises, that the only key to the curative or disease-curing power of medicines could be found in their disease-producing properties, received from this experiment a definite direction and a precision which encouraged him to proceed further with similar experiments.

In 1791 Hahnemann translated David Monro's *Medical and Pharmaceutical Chemistry and the Materia Medica*. From his note to the article Cinchona in this work we find him holding the same views that he had expressed in his translation of Cullen's work. On Monro's observation that he had "seen people who within a month have taken from eight to ten ounces of it *(Cinchona)* without the least good effect; but who on the other hand were

cured when they took two ounces in a single day, and kept up this dose for two or three days successively," Hahnemann made the following remarks:

"Nor is this quantity necessary. The patient is not overloaded, and an equally good result is attained in regular intermittent fever if, shortly before the expected attack, one or two good doses are administered; for instance, two hours and one hour before the approach of the paroxysm, from one and a half to two drachms in each dose of good bark in substance. All previous doses given long before the attack are of little or no avail in checking it. Should the first attack not appear, then let the same treatment be followed with respect to the second, and reduce the dose to half at the time the third may be expected.

"If, as Cullen and others suppose, the anti-pyretic power of bark proceeded from its tonic properties, it would be more to be depended on to cure intermittent fever in the first mode of exhibition than in the second, since the system must be certainly more strengthened by taking ten ounces in a month than by taking one or two ounces in five or six doses immediately before the attack; but this is not the case. If, however, my opinion, more circumstantially worked out in the remarks on Cullen's 'Materia Medica,' be admitted, 'that the bark, besides its tonic property, overrules and subdues intermittent fever by exciting a fever, peculiar to itself, and of short duration,' then it will not be difficult to solve this paradox. All other substances which excite antagonistic irritability and artificial fever, check intermittent fever, if administered shortly before the attack, as specifically as bark, only they are not so certain in their operation. Of this kind are *Ipecacuanha,* taken dry, *Ignatia, Arsenic,* Pepper, Wine, and Brandy, a concentrated infusion of several ounces of burnt coffee with lemon juice, and so on, none of which belong in the least to tonic remedies. The first (*Ipecacuanha*) is even useful in cases where bark has been already tried in vain, or with injury to the patient. Besides, there are medicines much more bitter and astringent than bark, for instance, the powder of gall apples mixed with gentian root, and still the bark is preferred for checking intermittent fever; indeed, all bitter plants excite, in large doses, some artificial fever, however small, and thus occasionally drive away intermittent fever by themselves.

"I have stated my opinion on this subject and would add that

this power to excite a peculiar fever appears the more probable from the well known fact that, in common with everything which stimulates the action of the heart and arteries, it increases the heat, even in the mildest attacks, if adminisrered during the hot stage itself, especially where fulness of blood predominates."

This is a long note and we have given it entire, because it, like the note in Cullen, has considerable value from the historical point of view. We learn from it that though a year has elapsed since the Cinchona experiment, Hahnemann does not seem to have made any further experiment either with Cinchona or any other drug. Up to this time he was evidently satisfied with the single experiment that he had made on himself. Up to this time he did not think it necessary to repeat the experiment on others. For if he had made other experiments either on himself or on others, this was the place to have made mention of them. But he does not do so. He however makes two observations, but he does not tell us on what grounds. The observations are—(1) "All other substances which excite antagonistic irritability and artificial fever, check intermittent fever, if administered shortly before the attack, as specifically as bark, only they are not so certain in their operation." And he cites Ipecacuanha, Ignatia, Arsenic, Wine, Brandy as examples. (2) "Indeed, all bitter plants excite in large doses, some artificial fever, however small, and thus occasionally drive away intermittent fever by themselves."

How did he know that Ipecacuanha, Ignatia, Arsenic, Wine, Brandy, does excite antagonistic irritability and artificial fever? If he had arrived at this knowledge by direct experiment as in the case of Cinchona, he would not have omitted to say so. And how again could he come to the wide generalisation that "all bitter plants excite, in large doses, some artificial fever, however small," when in criticising Cullen he himself had said that the strongest bitters combined with the strongest astringents could not produce a specific for fever?

With reference to the power of Cinchona to excite a peculiar fever we find him stating that this "appears the more probable from the well known fact that, in common with everything which stimulates the action of the heart and the arteries, it increases the heat, even in the mildest attacks, if administered

during the hot stage itself, especially where fulness of blood predominates." Here, it will be seen that the power of Cinchona to excite the action of the heart and the arteries is assumed or taken on trust from observation on patients, and the probability of its fever-producing power is inferred from "the well-known fact" of its increasing the heat when administered during the hot stage. This "well known fact" was obviously a clinical fact, and Hahnemann does not neglect to take advantage of it for corroboration of his hypothesis.

From these notes in his translations of Cullen and of Monro, especially from the note in the last, it must have been seen that the idea of the law of similars in Hahnemann's mind down to 1791 was of the vaguest character. It was the "antagonistic irritability and artificial fever" that drugs could produce that enabled them to oppose and check fevers, and this they did in various degrees, some more some less, according to their power of producing those conditions. According to him some were more specific in this respect than others. He had not yet realized the minutiæ of the similarity that the law demands and which he afterwards developed.

Hahnemann has been accused of having built his theory on one single experiment, the Cinchona experiment of 1790. The accusation was made so far back as 1866, by one of our own school, Dr. Langheinz of Darmstadt, and so recently as 1896 by another distinguished member of our school, Dr. Conrad Wesselhoeft of Boston. Even Dr. Wilhelm Ameke, of Berlin, one of Hahnemann's best defenders, in commenting on the "elucidation by examples" of his therapeutic principle, in his *Essay on a new principle for discovering the curative properties of drugs*, published in 1796, says: "Hahnemann here commits a great error, the greatest possible under the circumstances. He leaves the method by induction too soon, and assumes the truth of many effects of drugs which he should first have tested. Various hypotheses are quoted instead of evidence, while other examples are very unsatisfactory. If he had only made use of unassailable demonstrations as he did with belladonna, mercury, arsenic, aconite, veratrum, ipecacuanha, rhus, and discarded all doubtful matter he would have much better served his cause."

(To be continued.)

PATHOGENESIS OF COCAINE.

(From the French of Dr. Marc Jousset in L'Art Medical for Feb. and April 1900)

SYMPTOMS RELATING TO LIFE OF RELATION.—

Moral.—Cocaine produces symptoms of excitement and depression. The symptoms of excitement vary from simple augmentation of cerebral activity to the most intense delirium.

Augmentations of cerebral activity, great facility for intellectual work; he writes and composes easily, but the next day he finds that though each phrase may be complete, the ideas are incoherent.

Sensation of agreeable gaiety; hilarity; he is in a state of gaiety as if he has drunk whisky: he appears drunk.

Gaiety, loquacity, facility for intellectual operations with general sensation of comfortableness.

Loquacity, he repeats the same idea in different ways, because he misses the proper expression.

Grand ideas; he feels he has superior vigor, fit for all work requiring strength; he thinks he is superior to everyone; he feels an irresistible necessity to move about, to gesticulate; would undertake any great exploit.

Incoherent speech; confusion of ideas with drowsiness.

Difficulty of articulating words.

Delirium and nocturnal restlessness.

Illusions; he imagines he meets with frightful objects at every step.

Hallucinations of vision and hearing.

Violent delirium with hallucinations simulating delirium tremens.

On the contrary, symptoms of depression, faintness, torpor, numbness are observed.

Semi-coma, from which he may be either easily roused to answer questions, or only with great difficulty roused.

He is completely inert with haggard eyes, without power to speak, after a sub-cutaneous injection.

State of apathy, of somnolence for five hours, but with clear response to questions, after painting the larynx with cocaine.

Sleep.—In weak doses cocaine produces a sedative effect and

brings on sleep; in strong doses it produces insomnia with delirium and vertigo.

Drowsiness with heavy head.

Habitual insomnia.

Sensibility.—Cocaine produces anæsthesia and insensibility to pain, whether locally by direct application or by sub-cutaneous injection, or generally by toxic doses. It produces insensibility to touch, to pain, and even to sensation of cold and of heat.

Hyperæsthesia.

Motility.—Small doses produce, as first effects, augmentation of muscular power, followed by greater or lesser feebleness.

Toxic doses immediately bring on loss of mobility; loss of use of the legs, followed by their weakness for several days.

Vacillating gait, with difficulty of speech, mental confusion and extraordinary agitation.

Staggering gait, with weakness of the legs.

On the contrary, cocaine produces some convulsive symptoms:

Feeble convulsive movements. Convulsions with loss of consciousness; epileptiform attack.

Opisthotonus with convulsive movements.

SYNDROME.—*Febrile movement.*—Temperature above normal, with dry skin, rapid and very feeble pulse, shivering and chattering of the teeth.

Abundant perspiration: the sweat streams down the face and the body, and soaks the garments. His head fumes. This perspiration is followed by great prostration, with chilliness and a presentiment of approaching death.

SYMPTOMS OF THE HEAD.—Vertigo with obscurity of vision, with sensation of great feebleness of the head; with semi-coma.

Rush of blood to the head; sensation of heat in the head; pulsating and bursting sensation in the head.

Violent cephalalgia; supra-orbital cephalalgia.

Hemicrania; fulness and heaviness of head.

Face.—Pallor of the face, with cold sweats; cyanosis.

On the contrary, face slightly red and damp; redness of face; fulness and heat.

Perspiration of the face and neck.

SYMPTOMS OF THE ORGANS OF SENSE—*Eyes and Vision.*—External applications produce a mild sensation of burning of the

conjunctiva and of the cornea : pallor of the conjunctiva.

In the margin of the cornea we find denudation of epithelium, vesicular keratitis, opacities.

The anæsthesia of the cornea, which is produced by dropping of cocaine, is not found after absorption of the drug from the digestive canal.

The inflammation of the eye, the panophthalmia, has been attributed to repeated instillations of cocaine for operations. The swelling of the ocular conjunctiva is observed especially in the upper part.

Œdema of the ocular conjunctiva, mydriasis was noticed by almost all observers; it may be accompanied by slight paralysis of accommodation: the pupils are largely dilated, the right more than the left.

In some cases pupils remain normal, not dilated, reacting well to the light.

Tension in the eyelids; the eye appears protruded forwards.

Widening of the slit between the eyelids, with protrusion of the eye forwards, fixed look, augmentation of the brilliance of the conjunctiva, absence of winking of the eyelids, as in Graves' disease.

Fixed look, with widening of the palpebral slit.

Look fixed, haggard.

Augmentation of the lachrymal secretion, then dryness of the eyes.

Obscuration of vision, with dizziness, stupor. Weakness of vision. Amaurosis (from toxic doses).

Astigmatism; the letters appearing to dance from left to right. (the left eye having been cocainized); in one case the leaping was more perceived in near vision, in others in distant vision.

Ears and hearing.—Humming with rush of blood to head. Deafness.

Nose and smelling.—Locally applied, cocaine produces a sensation of numbness, followed by anæsthesia; the mucous membrane appears pale and anæmic; it is wrinkled. Then, as secondary action, are observed swelling of the mucous membrane and hyperæsthesia.

Loss of smell.

SYMPTOMS OF THE SKIN.—Profuse perspiration, perspiration of

the face and neck; slight perspiration of the forehead.

Sensation of foreign bodies under the skin.

Ganglions.—Tumefaction of ganglions in the neighbourhood of the injection.

Symptoms of the Digestive Apparatus.—*Mouth and Pharynx.*—Local applications of cocaine produce anæsthesia of the mouth and tongue, with a peculiar sensation.

Dryness of the mouth and of the pharynx is noted in almost all the observations.

Burning pains in the palate.

Slight numbness of the mouth and tongue. Tongue dry and pale.

Difficult deglutition.

Bitter taste. Loss of taste.

Anorexia.

The teeth become impaired; the roots become absorbed.

Salivation.

Stomach.—Sensation of heat; of emptiness; of pressure in epigastrium; nausea; nausea without vomiting; continual vomiting; vomiting which relieves.

Violent cramps of the stomach.

Intestines.—Diarrhœa was noted by one observer. Another noticed obstinate constipation for several days, difficult to remedy.

Symptoms of the genito-urinary apparatus.—*Generative Organs.*—In man is noticed sexual excitation, and abolition of the function. Sensation of cold and of relaxation of the genital organs, as if the penis were absent; during the employment of cocaine, feebleness of the organs with loss of semen and impotence.

The injection of cocaine into the urethra brings on anæsthesia and produces pallor of the glans. Burning while urinating.

In the female, repeated local applications have produced anæsthesia of the vulva and vagina.

Urinary secretion.—Cocaine produces augmentation of the secretion, sometimes diminution to the extent of anuria. It appears to us that toxic doses produce augmentation, small doses diminution.

Augmentation of urinary secretions and of phosphates.

Out of eleven subjects in good health, in eight there was augmentation of the quantity of urine.

Cocaine diminishes the urinary secretion, hinders the oxidation products and brings on a mild form of uræmia. In massive doses it produces anuria with grave uræmic accidents. This anuria is followed by diuresis.

Symptoms of the Respiratory Apparatus.—The painting with and inhalation of cocaine produces anæsthesia of the larynx and trachea and suppresses cough.

Respiration easier, with augmentation of the respiratory movements.

Dyspnœa. Considerable dyspnœa. Rapid respiration.

Tendency to sighing.

In animals, in small doses, the respiration is accelerated, then diminished; in large doses, rapid diminution, then paralysis of respiration.

Cheyne-Stokes respiration.

Symptoms of the Circulatory apparatus.—The action of cocaine upon the heart is stimulant in small doses, inhibitive of the contraction of the ventricles in medium doses; produces arrest in diastole in toxic doses. The beatings of the heart bring on afflux to the head; tinnitus aurium; confusion of ideas; beatings in the fingers and toes.

Passing (transient) syncope when the patient, in whom cocaine has been injected, is not in the lying position.

The pulse is augmented in frequency under the influence of cocaine; it may be full; but more often it is so feeble as to be counted with difficulty; it presents intermittence after about every five beats, with cyanosis of the face, and an internal sense of suffocation in the region of the heart.

As an opposite symptom, we find the pulse fuller and slower.

The sphygmographic tracings show an increase of energy of the cardiac contractions and diminution of the arterial tension (in some doses and in some conditions ?).

Cocaine produces contraction of the blood vessels and increase of the blood pressure.

Its action upon the temperature is to raise it a little above the normal, sometimes with hot and dry skin, sometimes with chilliness and chattering of the teeth.

In animals, its action depresses the heart, which diminishes the force and increases the frequency of its beats; finally paraly-

sis in diastole (Hermann, M. Bigge) or in systole (Gubb).

Symptoms of the Extremities.—Tingling and numbness in the hands, in the whole left arm the seat of the injection, in the toes and fingers, tingling in the fingers preventing writing, cramps in the legs and feet, on the dorsal surface of the right foot.

Trembling of the fingers. Anæsthesia and analgesia of the inferior extremities and of the trunk, after intra-spinal injection.

Weakness of the legs; vacillating walk; loss of use of the legs for several days.

THERAPEUTIC APPLICATIONS.

We may attempt either to produce in our patients a physiological action of cocaine, or we may administer it to them after the law of similitude. There are thus two modes of application absolutely dissimilar, according to the dose and indications. In the first case we employ appreciable and sufficiently strong doses and generally for a palliactive action; in the second case we employ it in small or infinitesimal doses, and we ought to obtain a curative action.

I.—*Palliative Action.*—The palliative action of cocaine is obtained in three ways: on the mucous membranes, by hypodermic injections, and by intra-spinal injection.

(a) Upon mucous membranes.—Oculists use drops to the conjunctiva with great advantage; they render the conjunctiva, the cornea, completely insensible, and thus practise upon the eye a great number of operations, such as removal of foreign bodies, iridectomy, cataract, &c., without having recourse to general anæsthesia. They employ the following collyrium:

Cocaine	0.50
Sterilized water ...	10 grammes

of which they instil a few drops into the eye. Ten minutes are sufficient for the production of anæsthesia.

The nasal and the laryngeal mucous membrane may in this way be anæsthetized for performing petty operations, such as removal of polypi, resection of hypertrophied mucous membrane, &c. Generally the following strong solution is used:

Cocaine	1 gr.
Sterilized water ...	24 grs.

(b) Hypodermic injections.—For the removal of small tumors, for the extraction of teeth, in a word for any petty operation, we may inject under the skin around the tumor to be removed or under the gum one or two grammes of the following solution :

Cocaine ... ... 1 gr.
Sterilized water... ... 100 grs.

(c) Intra-spinal injection.—Bier has injected hydrochlorate of Cocaine into the spinal canal of six patients attacked with various surgical lesions, and has been able, after such injection, to perform upon the lower extremities without the least pain the operation of resection of bone, which was evidently the seat of osteo-tuberculosis.

The mode of procedure is as follows: He at first anæsthetizes the soft parts of the lumbar region by hypodermic injection of cocaine, then plunges a fine trocar and canula till it reaches the spinal canal, and withdrawing the trocar he stops the orifice of the canula with the finger to prevent as much as possible the flowing out of the cerebro-spinal fluid. Then with a Pravaz syringe exactly fitting into the canula he injects about 5 to 15 milligrammes of cocaine into the spinal canal. Five to eight minutes after the injection there is complete analgesia of the lower extremities reaching more or less to the trunk. This analgesia lasts about three-quarters of an hour.

II.—*Curative or Homœopathic Action.*—This is quite a new therapeutic employment of the drug and has to be tried. We proceed to pass in review the various diseases and the various symptoms for which cocaine may be employed, by applying the knowledge we possess of its action on the healthy human being. Clinical experience alone will tell us whether the employment of cocaine after the law of similitude will maintain its ground in our practice.

General Paralysis.—Here are the indicative symptoms : Grand sensations; he feels a superior vigor, fit for all works of strength; he feels a power superior to every one; he has an irresistible necessity to move about; he will undertake any exploit. Dilated pupils. Incoherent speech; difficult articulation of words; weakness of the legs; vacillating walking.

Neurasthenia, Hysteria.—A certain number of symptoms relate to these neuroses: gaiety, hilarity, loquacity, hallucinations,

excitement. In other experimenters, mental depression, faintness, weakness of the legs. Mild convulsive movements. Epileptiform attack. Vertigo; cephalalgia.

Cephalalgia and Vertigo.—Vertigo with obscurity of vision; congestion of the head; cephalalgia with throbbing and bursting.

Menière's Disease.—Vertigo, buzzing and humming in the ears; deafness.

Basedow's Disease.—Tension of the eyeball which appears to be protruded forwards; enlargement of the palpebral chink, with protrusion of the eye forwards, fixed look, increased brilliancy of the conjunctiva, absence of winking of the eyelids. Palpitations, rapid pulse, ordinarily feeble. Trembling of the fingers.

Disease of the Heart, Asystole.—Beatings of the heart frequent, small, most often very feeble, with intermittence. Dyspnœa, suffocation.

In animals, cocaine depresses the heart, diminishing its force and augmenting its frequency, with final paralysis either in systole or in diastole (experimenters not in accord).

Diminution of the urinary secretion, which may go to the extent of anuria.

Impotence.—Impotence is a marked symptom. Sensation of coldness with relaxation of the genital organs, as if the penis were absent. Feebleness of the organs with loss of semen and impotence.

Writer's Cramp.—Tingling and numbness of the hands; tingling in the fingers which prevents writing.

Insomnia.—The use of cocaine brings on habitual insomnia.

Constipation.—One experimenter noted obstinate constipation for several days.

Doses and modes of administration.—Here again we have no personal experience. In some of the cases we have employed it, we have given the 3rd decimal dilution.

REVIEW.

The Twelve Tissue Remedies of Schüssler, Comprising the Theory, Therapeutic Application, Materia Medica, and a Complete Repertory of these Remedies. Homœopathically and Biochemically considered. By W. Boericke, M.D., Prof. of Materia Medica in the Hahnemann Hospital College, of San Francisco, and W. A. Dewey, M.D., Prof. of Materia Medica in the University of Michigan Homœopathic Medical College. Fourth Edition, Rewritten and Enlarged. Boericke & Tafel. Philadelphia, 1899.

We owe an apology to both authors and publishers for not having noticed this work earlier.

We have pronounced our judgment on Schüssler's Tissue Remedies in the November and December numbers of this Journal for 1898, and, with our growing experience and more advanced knowledge of physiology and animal chemistry, we are only confirmed in the correctness of that judgment, and have not to retract a word of what we have said. It was downright ingratitude on the part of the author to have ignored homœopathy after having profited by his practice of the system and derived the clue to his own system from it. We have shown that the assumptions on which he has attempted to base his theory and practice cannot be correct, that there are facts which are outside of them, and that it is monstrous to suppose that all the illness flesh is heir to can be successfully treated by a few so-called tissue-salts, and all in minimal doses.

We are glad to see that the authors of the work under review fully recognize the necessity of careful proving as the only way by which the permanency of these remedies may be secured, and that accordingly they are incorporating the provings of those that have been already made. They said in the Preface to the 1st Edition (1888) that "thorough and systematic proving of drugs, from its very excellence, is a thing of slow growth, and the temptation could not be resisted to seek other and shorter methods, always more or less questionable, but sometimes yielding admirable results. The most important of such deviations from the strictly classical method of proving on the healthy, was the acceptance of Clinical Symptoms; used cautiously, this source can be of inestimable value, as much of our clinical experience proves."

But they recommend other deviations than the acceptance of Clinical Symptoms, which, we are prepared to admit, do lead to valuable results. They ask "why may not the same results follow, by accepting tentatively, and for the time, Schüssler's theories of the respective spheres of actions of his remedies and

the indications based thereon, which to say the least, are bold and often brilliant recommendations for their employment in disease?" We have shown that these "brilliant recommendations" were originally based upon homœopathic provings, though afterwards, for the sake of gratifying the ambition of being the builder of a new system, they were attempted to be based upon agricultural chemistry!

Our authors in the Preface to their third edition emphasizes their divergence from Schüssler: "Our conception of the true place of the Tissue Remedies has separated us more and more with each new edition from that of their distinguished introducer. While we have abided by his first conception, and endeavoured to further their development along the lines of Homœopathy, Schüssler prefers now to look upon the Bio-chemic method as entirely distinct from Homœopathy, and as an all-sufficient therapeutic procedure and chemical hygiene. Thus while he relies solely on the chemico-physiological facts and theories as guides for the therapeutic application of his remedies, we, accepting and utilizing all these, add thereto the indications derived from provings—the only legitimate and permanent basis for drug selection in disease. On this account, Dr. Schüssler notwithstanding, we believe that careful provings of these remedies in all potencies should be made by our school."

Schüssler was very jealous of his bio-chemic theory. He would have no other guide for the indications of his remedies. Speaking of translations of his work into English, Spanish and French, he said in the Epilogue to his last edition—"In these books, there are many indications supplied by the translators which are either insignificant or erroneous. When a translator, owing to his lack of apprehension of the subject, introduces his *false* views into the translation, he injures the cause and discredits the author with his readers." The distinguished author of *Abridged Therapy* had here no doubt an eye upon the indications from provings which his translators have supplied with the object of securing a permanent place to his remedies. If in this they have injured the cause of the bio-chemic treatment of disease, they could not help it. Such a result was inevitable in the necessity of things.

Schüssler's theory, that all diseases depend upon a deficiency of one or other of the tissue salts and therefore should be treated with a supply in minimal doses of the particular salt that is deficient, may go and will go; but the salts themselves as remedial agents will remain, thanks to thorough provings to which they will be subjected. It is this which the authors of the work before us are endeavouring to accomplish. They are succeeding more and more with each successive edition, and for this they deserve the thanks of the profession.

EDITOR'S NOTE'S.

France and Alcoholism.

The investigation of a French physician reveals the fact that 2,000,000 hectoliters of 100 hydrometer-degree pure alcohol are consumed in France annually. In 1850 it was estimated that the consumption of pure alcohol was 1½ liters per head; and 1896, 4.19 liters, which did not include wines, beers, and cider. There has been a corresponding increase in the number of drinking places also. In 1850 there were 280,000, and in 1896, 500,000.—*North American Journal of Homœopathy*, January, 1900.

Abolition of Public Execution in Spain.

The Spanish Legislature has recently made an important reform in the manner of inflicting the last penalty of the law. The execution of criminals is no longer to be carried out in public. Moreover, condemned criminals are no longer to be exposed to the morbid curiosity of people in search of a sensation in the prison chapel for twenty-four hours before execution. The object of this custom was to give the criminals an opportunity of preparing for death; but as the public was admitted professedly to join in prayer for the soul about to pass out of the world, the sands of the dying sinner must have been rudely shaken by the ceaseless rushing of a stream of sightseers. The measure is mainly due to the persevering efforts of Dr. Angel Pulido, one of the medical members of the Spanish Cortes.—*Brit. Med. Journ.*, April 14, 1900.

Gauze Pad Two and a Half Years in Abdominal Cavity.

Buschbeck (*Monats. f. Geburts. u. Gynäk.*, December, 1899) states that a woman, aged 34, underwent abdominal section six weeks after her last period for suspected ruptured tubal pregnancy, and recovered. Whether a tubal sac was removed and adhesions to intestines were found we are not informed. Two years later the patient suffered from severe colicky pains in the right side. An irregular swelling was detected to the right of the uterus; it extended upwards to the abdominal wall. Fever set in, and after severe pain the lower extremity of the abdominal cicatrix gave way. The fistula thus developed discharged liquid fæces freely; it was dilated and a gauze pad came away; this foreign body had clearly been left in the peritoneal cavity at the time of the operation, and managed to find its way into the intestine. Stelzner operated, resecting nearly 8 inches of intestine adjacent to the perforation. The patient recovered. Meinert has removed gauze pads left behind in the peritoneal cavity three times, and Leopold reports similar cases.—*Brit. Med. Journ.*, April 7, 1900.

Thomsen's Disease (Myotonia Congenita) in a Brother and Sister.

Dr. J. S. Risien Russell demonstrated at a meeting of the Neurological Society of London on March 15th two cases illustrating the

heredity of Thomsen's disease, the patients being a Hebrew boy and girl. The children were apparently of natural development, not backward in speech or walking, and free from fits of any description. The boy, aged 15½ years, seemed somewhat poorly developed for his age. His growth appeared to have been natural until he was five years old, when a difficulty in performing voluntary muscular movements began to be noticed. His condition gradually grew worse. It was most marked in the morning and on attempting to get up or to walk the movements of the arms and legs were hampered by stiffness of the muscles. Gradually in the course of the day this stiffness diminished. Walking was always difficult, however, especially after a period of rest. On closing the eyelids tightly the patient could not readily open them again and after closing the hand tightly the extension of the fingers was slow and difficult. The knee-jerks were normal and there was no spasticity. The girl was aged five and a half years and presented similar phenomena but in a less marked degree than did her brother. Her trouble seems to have commenced at the age of four years, and at the date of the demonstration (16 months after) it was more noticeable. In the four months during which she had been under observation the condition had grown worse.—*Lancet*, March 31, 1900.

Pregnancy taken for Fibroid.

Routier (*Bull. et Mem. de la Soc. de Chir. de Paris*, November 21st, 1899) reports a case under Psaltoff of Smyrna where a widow, aged 30, entered hospital for an attack of metrorrhagia. She had borne two children; during the past two years the period had, she declared, been suspended for eleven months, and returned for four, whilst for the last three months they had been absent. She was watched for thirteen days; as the metrorrhagia persisted an examination was made under chloroform. The uterus was found very bulky and movable; the sound passed 4¼ inches. The cervix was at once dilated with Hegar's bougies up to No. 14, and the uterine cavity was curetted and swabbed with chloride of zinc. The bleeding continued till ten days later, when it began to diminish. The chloride was again applied. The patient had denied that she had had connection since her husband's death. Eighteen days after the second swabbing hysterectomy was begun, interestitial fibroid being diagnosed. The uterus appeared congested and fluctuated; it was tapped, but nothing came away; the canula proved to be plugged. A Tait's screw was thrust into the uterus to draw it out of the wound. Then an assistant thrust a forceps into the vagina to push up Douglas's pouch close against the uterus. Psaltoff cut down on it, but when he had made an incision three-quarters of an inch long he found that he had cut into a gravid uterus. He at once sutured the incision, also the screw wound, and closed the abdomen. Abortion occurred in a few hours, then the patient rapidly recovered. Routier believes that the metrorrhagia was probably the beginning of an abortion wilfully induced. He insists that the speculum and the sound are now in disrepute; the former is used for dressings,

not for examinations, whilst the sound should only be used in exceptional cases after due precaution. The length to which that instrument passed used to be registered with great precision, far more faithfully than the accidental abortions which it not rarely induced.—*Brit. Med. Journ.*. April 7, 1900.

What Liquid Air Will Do for Us; It's Uses in the Home.

It is now believed that liquid air will soon be put on the market at very moderate prices. The practical householder, therefore, is already beginning to ask questions.

First, how will it be supplied, how long can it be kept, and is it safe to handle? It will be brought to your house, like milk, in protected cans containing any desired quantity, from a quart or two up to twenty or thirty gallons. It can be sent by rail, and delivered at distant points.

Liquid air is as safe to handle as boiling water, and requires about the same precautions. Here extremes meet. Intense cold burns like heat, and liquid air has even been used to cauterize ulcers.

Of course, the most obvious use of liquid air is for cooling things—any sort of refrigeration.

A bowlful set in your meat safe will do all the work of a big cake of ice, but much better. It will slowly waste away, but the product is nothing but air and cold. It is absolutely dry; there will be no drip.

You want a glass of ice-water. Pour the water into the tumbler and drop into it half a teaspoonful or less of liquid air. After dancing and bubbling and showing all manner of jewel tints for about a minute the liquid air disappears. Your glass of water is now cooled, and has a little lump of ice in it.

To make ice cream, pour a little liquid air into the cream or custard, and stir vigorously.

You can cool wine or beer almost instantly by pouring a thin stream over the surface of the bottle. This you can do as you sit at table; it will not soil the cloth. Too much would freeze the liquor and break the bottle.

To cool a room on a hot day take half a bucket of liquid air and splash it about the room with a dipper. It will dance over the floor in bright globules, and fill the room for a moment with a cloud of mist, but it will wet nothing and do no injury, even to the most dainty upholstery. It will not only cool the air, but will make it pure and bracing; like a sweet mountain breeze, for there is always some excess of oxygen in liquid air.

In the sick room this cooling and freshening of the air will be simply invaluable, especially in fever cases.

With liquid air you can not only purify the air, but also water. It is an admirable disinfectant. The large amount of oxygen in it simply burns out all impurities. All you have to do is to throw it in, and, perhaps, stir it up a little. A panful placed on the floor of the cellar will sweeten things wonderfully, besides making the place, and, indeed, the whole house, perceptibly cooler.

All these things, and much more, you can do yourself, without trouble and without special appliances. All you need is a properly insulated can containing a few gallons of the liquid.—*Weekly Scotsman*, in the *North American Journal of Homœopathy*, Jan. 1900.

The Cerebral Symptoms of Typhoid Fever.

Nervous and cerebral symptoms assume an important place in the symptomatology of typhoid fever and their frequency has led to the name Nerventieber, which is one of the German synonyms for this disease. Headache is extremely common, while delirium and even acute mental confusion may be not infrequently present. The stage of convalescence may also be marked by attacks of nervous depression and exhaustion, and Professor J. M. Da Costa recently exhibited a case which had been free from notable nervous disturbance during the illness, but in which during the period of convalescence and about a week after the fever had subsided mild nocturnal delirium had set in, with mental confusion and hallucinations which, however, disappeared during the day. This condition eventually disappeared under suitable tonic treatment (syrup of hypophosphites with strychnine) and the ingestion of small quantities of alcohol (whisky) with food at short intervals. Dr. Thomas Claytor, Professor of Clinical Medicine at the Columbian University (D.C.), reports three interesting cases of general convulsions occurring as a cerebral complication of typhoid fever. The infrequency of general convulsions may be guaged by the fact that Murchison in his classical work "On the Continued Fevers of Great Britain" states that of 2960 cases of enteric fever admitted to the London Hospital in eight years convulsions occurred in only six cases. Dr. Claytor's cases are as follows.

Case 1.—The patient was a private soldier, aged 26 years, who was attacked with fever, headache, diarrhœa, and epistaxis in the Cuban campaign. He was admitted to hospital on the twentieth day of his illness, the temperature rising on occasions to nearly 106°F. He was slightly delirious at times. Numerous large abscesses on the body and the limbs followed subsidence of fever, and these were freely incised and evacuated. He was on the road to recovery and on the thirty-fourth day of his illness "while apparently asleep he uttered a sharp cry, threw up his hands, and went into a slight general convulsion. The eyes were fixed and glassy; there was slight frothing at the mouth for a few seconds." He remained unconscious for ten minutes, and on recovering he said that he felt as though he had been dreaming. On the fiftieth day of the illness (convalescence having been established) he had a second and more serious seizure. "While sitting up in bed eating his supper he suddenly uttered a sharp cry, threw up his hands, fell over on his right side, and went into general convulsions." The convulsive movements were followed by a period of rigidity with the head and shoulders bent forward. In from 12 to 15 minutes the forearms were flexed and raised to the head, and slight twitchings with grinding of the teeth and drawing of the face to the left followed. The patient lay

on his right side all night with the head and shoulders bent, the legs and thighs flexed, and the arms rigidly set in the attitude mentioned, and any attempt to change the position caused a return of the spasms. The jaws were firmly set and feeding was only possible by a tube passed into the œsophagus through the nose. He gradually recovered and was well in a few days.

Case 2.—A young soldier, aged 24 years, had enteric fever, and on the twenty-seventh day he became unconscious and had slight general convulsions. The breathing was very slow (four respirations per minute) and there was blood in the stools. Baths were frequently given and he ultimately recovered.

Case 3.—The patient, aged 27 years, had intercurrent relapses of typhoid fever, lasting in all three months. There were delirium and profuse sweating on August 30th, 1899, followed by generalised convulsions on the next day with loss of consciousness. Eventually the patient recovered.—*Lancet*, March 24, 1900.

Unusual Cases of Insomnia.

Professor H. Oppenheim of Berlin has contributed to the *Berliner Klinische Wochenschrift* (No. 49, 1899) a valuable clinical lecture devoted to some unusual cases of insomnia. Various types of insomnia exist requiring different methods of treatment. Thus, to the psychical or ideogenic type belong all cases in which mental worry and overstrain, violent emotions, morbid concepts, hallucinations and delusions, or other pathological mental states are the causes which prevent sleep. The insomnia of many lunatics and of patients suffering from grave hysteria and neurasthenia belongs to this category. Some patients suffer from interruptions of sleep owing to the appearance of certain "phobias" or terrifying and startling ideas which may occur while falling into sleep. Closely related to the psychical is that type in which a hyperæsthesia of the senses (hearing, tactile and cutaneous senses) interferes with sleep or renders it difficult. The second category includes types of insomnia due to pain (algogenic type). Apart from bodily pains of various sorts there may be disagreeable or irritating sensory disturbances which serve to promote insomnia—e.g., pruritus, thermoparæsthesia, excessive flushings and feelings of heat, and tinnitus aurium. Gastro-intestinal disturbances (colic and enteritis) play an important part and cardiac and respiratory disturbances also act prejudicially in driving away sleep. There is also an insomnia of sexual origin arising from various conditions which may disturb or unduly stimulate the sexual life. At times sleep itself is a cause of troubles which interrupt and break it, thus dreams, night-terrors, and nightmares arise in the course of sleep, and when they have attained a sufficient intensity they produce wakefulness. Professor Oppenheim mentions two interesting cases, in one of which the patient, who was perfectly well in the waking state, was frequently awakened from sleep by the pain and discomfort of severe girdle-pains, while the other patient was subject to attacks of occipital neuralgia only during sleep.

There are pains and disagreeable experiences which are intimately connected with sleep just as there are forms of epilepsy which only manifest themselves during sleep (noctural epilepsy). A case is also reported of a woman who had removed from influenza with the following extraordinary result. As long as she was awake the heart's action and the respirations were normal, but as soon as she went to sleep they subsided to so slow and feeble a rate as practically to cease and she was in danger of dying. This state of affairs was so alarming that she had to be constantly watched and kept by artificial means from falling into sleep until by the administration of drugs (bromides and nerve tonics) the condition eventually passed away. Another case is recorded of a married woman, aged 35 years, who one day unexpectedly received bad news. She became excited and agitated by this and her sleep was disturbed by attacks of dyspnœa which came on at intervals of from 15 to 30 minutes all through the night. During these attacks she would start up unconsciously and on more than one occasion she sustained injuries by so doing. She was free from symptoms of hysteria. In about a minute after being thus awakened she would become conscious and would be able to answer questions and she could then go to sleep till interrupted again as before. Bromides were administered to this patient and she eventually recovered. The great importance of treating or averting insomnia and thereby of obviating threatened mental breakdown is urged by Professor Oppenheim as chiefly needed in all cases with hereditary tendencies to mental disease.—*Lancet*, March 31, 1900.

Ovarian Pregnancy.

Of late years the possibility of true ovarian pregnancy has been denied by the majority of observers of repute, particularly in this country, and it has practically come to be the accepted opinion that all varieties of ectopic gestation are primarily tubal. In the older textbooks on obstetrics and gynæcology ovarian prègnancy was always included in the list of varieties of extrauterine fœtation, and the change of opinion is due chiefly to the influence of the late Mr. Lawson Tait, who, in his very able and lucid pamphlet on the subject published in 1888, enunciated the principle that all forms of ectopic pregnancy have their starting point in the Fallopian tube. The researches of Clarence Webster, Bland-Sutton, and J. W. Taylor have tended to strongly confirm this opinion. Webster holds that the ovum can only be grafted upon such tissues as can respond to the genetic influence—that is to say, undergo decidual changes—and he considers that there is no reason to believe that the Graafian follicles can undergo this "genetic reaction," and no proof that a pregnancy has ever started in them. Bland-Sutton sums up his views on the subject as follows: "Until some specimen is forthcoming in which an early embryo in its membranes can be demonstrated in a sac inside the ovary, we need not trouble ourselves to dissuss ovarian pregnancy." A paper by Van Tussenbroek in the *Annales de Gynécologie et d'Obstétrique* would seem to reopen the question; it embodies the results

of a very careful examination of the specimen removed and clinically described by Konwer in 1893, and the conclusion arrived at, on apparently very strong evidence, is that the case was a genuine example of pregnancy within a Graafian follicle. The ovary, which was practically healthy, was separated from the tube by a considerable mesovarium, and the two organs were unconnected by adhesions. A recent corpus luteum was seen in the ovary, and Graafian follicles in various stages of development, but none of them approaching maturity. The tube was normal save for slight twisting and agglutination of its fimbriæ, and its orifice was patent. The ovisac, which formed a tumour about the size of a nut on the surface of the ovary with a broad base, appeared to be a gravid Graafian follicle. At the base of the sac a sort of diverticulum extended into the substance of the ovary, and the wall of this portion had the structure of an ordinary corpus luteum. The rest of the walls of the sac consisted of the same structure thinned out by the pressure of the growing ovum. Decidual membrane or cells such as are found both in tubal and uterine pregnancy were not present. A fœtus, 12 mm. in length, surrounded by amnion and chorion, lay within the ovisac. Numerous chorionic villi, some in contact with maternal tissue, could be demonstrated between the chorion and the maternal wall of the sac. The conclusions arrived at are: (1) That ovarian pregnancy is a fact which can no longer be disputed; (2) that ovarian pregnancy signifies pregnancy in a Graafian follicle; (3) that as in this specimen the follicular wall does not show any transformation into decidual tissue, the conclusion must be drawn that Webster's decidual reaction is not a *sine quâ non* for the implantation of the ovum; (4) that the regular development in this specimen of normal syncytium constitutes a new and incontestable proof that the syncitium has no connection with the uterine epithelium, but is a derivative of the fœtal epiblast. The importance of this case is enhanced by the fact that it shows the conditions existing at an early stage. Previously described specimens have generally been too advanced to allow of any certain deductions as to their primary origin or the true relationship of the parts. It would, indeed, appear doubtful whether a true follicular gestation could reach an advanced stage of development if there is no decidual change in the maternal tissues as this case would indicate. The paper is illustrated with very clear coloured drawings of microscopical sections and a photograph of the entire specimen.—*Brit. Med. Journ.* April 14, 1900.

CLINICAL RECORD.

Foreign.

TWO CASES: PUERPERAL INSANITY AND NEURASTHENIA.

By W. E. Bloyer, M.D.

CINCINNATI, O.

Every physician owes to humanity, and to the profession as well, to give the widest dissemination to all such knowledge of means and methods that in his hands prove curative. In the present effort we not only comply with this demand of duty, but derive no small amount of pleasure. We feel satisfied that no greater good can be done for humanity in certain lines, than to promulgate the results obtained from orificial surgical procedures.

We do not believe that we can produce arguments as convincing as may be the report of a few cases, treated in accord with orificial principles.

PUERPERAL INSANITY.

About four years ago we were consulted by a gentleman from a neighboring state concerning his niece, who he said was a woman of good bodily vigor, about twenty-five or twenty-six years old, had been married several years, and had borne two children. The younger child was then nearing its third birthday. Some eight or nine months after its birth the mother began to show signs of insanity, which increased from day to day until, after the lapse of a month or two, and after all medical recourses, including the services of some of the best medical men in the state, had been exhausted, she was placed in the state asylum, not because she was unable to command private or sanitarium treatment, but solely because her friends thought that the best talent in these lines within the state was to be found in the State Asylum for the Insane. Her friends were in a position, financially and otherwise, to procure for her, even while there, a number of consultations and other special measures and services. It is enough to say that after she had been in the asylum for more than two years the superintendent informed her people that she was, in his opinion, incurable, and that the best that could be done for her was to make her comfortable either at home or in some private institution.

Her uncle, having heard of the beneficial effects of orificial work in some like cases, was anxious to know whether it might restore her. We said to him, "It may do so, and under the circumstances we certainly are justified in trying it, as all medical and hygienic means have failed." After thinking the matter over for a day or two, he

said to us: "Doctor, use any means or measures in this case you deem advisable, sparing nothing that might assist in her restoration." An examination without an anesthetic showed a sub-involuted womb with a chronic endometritis and an os uteri that had been badly lacerated, and that had only partly united, through the intervention of much cicatricial tissue. The tissues of the introitus and the womb were pale, loose, relaxed, feeble. As there was no serious trouble discovered in connection with the ovaries, we concluded that the first thing to be done was to correct the troubles in sight, and if necessary to look later for others, and if found to correct them then.

She was anesthetized, the womb dilated and thoroughly curetted; the trachelorrhaphy done, the rectum dilated and all pockets, pouches or papillæ within it ablated, and all superfluous fringes about the vaginal orifice neatly trimmed. In short, "all-around" orificial work was done, and there was nothing special in the case or about the operation. It was an ordinary case, such as we have seen dozens of times.

But the extraordinary part is still to be related. This woman had not spoken of her children, her baby, for nearly three years. For that length of time her mother's love, together with her mental faculties, lay dormant. On the second day after the operation came the dawn of a lucid mind in the question, "Where's my baby?" There was an uninterrupted recovery. Within a month she was at home in the South, the light and life of her husband and her home, and to-day she remains the same bright, cheerful, happy, healthy woman. And although we interdicted any indulgences that might lead to a subsequent pregnancy, our suggestions were of no avail, and a bright, healthy baby nearly two years old is the result. Not a sign of insanity has been seen to cross the beaming face of this happy mother, who was rescued from the yawning madhouse, the dungeon of the incurably insane, by simple operative measures, after all medical means had proven useless.

NEURASTHENIA.

A boy, two years old, thin, scrawny, a poor eater and sleeper, with a nervous condition that allowed him no rest day or night; that manifested itself in much crying, night terrors, bed wetting, and a dozen other things that go to make up a "nervous" child, had had a half dozen excellent physicians, but did not improve. Upon the suggestion of a mutual friend, we were consulted, and after hearing a full description and history of the case, and judging from past experiences, we said at once to the mother: "There is some trouble with your boy. Let us see his penis." There it was, a long, tight foreskin, with a very small opening. We told her that a slight operation would cure him, and assured her that he would be in bed but a very short time.

It is only necessary to add that the foreskin was amputated secundem artem—the boy was cured. These things speak for themselves. They cannot be talked away, or accounted for in any other way than that they relieve nervous irritation in a way that medicines cannot.—*Journal of Orificial Surgery*, Feb., 1900.

A CASE OF HICCOUGH CURED.

By E. H. Pratt.

Mrs. T. was about 42 years of age and in fairly good general health, being one of those strong wiry natures that seem able to exhibit almost any amount of endurance when called upon to do so—a good subject for tetanus or epilepsy. Her distress was hiccough.

When she applied for relief she had been suffering for two weeks, growing steadily worse. In that two weeks she had made diligent search for relief elsewhere, first to the drugstores in her neighborhood and the doctors they recommended, from all of which she obtained neither relief nor encouragement. In her desperation, although she was a woman of some means, not knowing what else to do, she made application for admission to Cook County Hospital under the impression that some of the attending men in that great place might be able to handle her case successfully. In that institution, however, she got no further than the examining room. She was told that her case was perfectly incurable, and she might as well prepare to die. They informed her that Cook County Hospital was an emergency hospital, and for curable cases only; that incurable cases were sent out to Jefferson to the poorhouse, and if she wished they would issue an order for her admission to that institution, remarking at the same time that her stay there would not be long, as hiccough was always fatal and she would not have long to remain anywhere. She thanked the interne who examined her for his kindness and his opinion, said that she had car fare enough to get home with and if she was going to die she would rather die at home than in the poorhouse.

As Cook County Hospital had failed her, she decided to visit the medical colleges in the neighborhood and persevere in her search until some one was found who took a more hopeful view of her case. In pursuance of this resolution she came first to our clinic and was referred to the orificial chair. When she presented herself for examination the habit of hiccough was badly established and accompanied with severe general convulsive movements of her entire body. Although she had applied as a clinical patient she refused to be made a clinic of, and insisted upon the work being done at her own home. As no time was to be lost, the next day she was placed under an anesthetic and subjected to general orificial work, which consisted in loosening of the hood of clitoris, repairing a badly lacerated cervix, and in performing slit work upon the rectum. It should be stated that the laceration of the cervix was an unusual one, presenting a three-cornered tear, the tissues between the tears being hypertrophied and every much hardened, so much so as to suggest a tendency to carcinomatous degeneration. The lining of the vagina was pale and leathery. One of the lacerations proved to be very deep, and the cicatricial scar extended for some distance into the body of the uterus. The cicatricial tissue, however, was all carefully removed and the parts of the cervix carefully readjusted and restored to a proper shape. In the rectum there were a few small papillæ and an unusual number of rectal pockets, having also a few very small hemorrhoids. The anal orifice was badly contracted and there was evidence of rectal catarrh.

The anesthetic employed was chloroform, to the administration of which she yielded very reluctantly, requiring double the amount usually needed for anesthesia and taking twice as long as common to succumb to its effects. Further than this, however, her case presented no difficulties whatever, and proved to be eminently satisfactory in every respect. She went to sleep with the hiccough and awoke without it, and although nearly two months have elapsed since the operation, it has never put in an appearance. She already complains of feeling better than she has in twenty years, and is deeply grateful for her rescue.

Cases of pernicious hiccough are so rare that it seemed important to place this one on record, and it was so eminently successful and bears marked testimony to the wonderful power of orificial work in such cases, and also gives silent testimony of the ignorance of the medical profession generally of one of the most powerful agents for correcting functional disorders at the command of the medical profession. Just because the woman's entire distress seemed to be hiccough, none of the doctors or druggists to whom she applied for relief, not even the interne who had charge of the examining room of Cook County Hospital, though far enough to consider it possible that some pelvic trouble might furnish a satisfactory explanation for the existence of the dread disease known as malignant hiccough. And yet this is such a reasonable explanation. Every doctor who has ever had to do with pregnant women knows the intimate relationship between the uterus and the stomach, for the great majority of of pregnant women are troubled with morning sickness during the first three months of pregnancy, when it is commonly recognized that the stomach has nothing to do with its own distress, but is suffering from an irritable condition of the pelvic organs. The close relationship between the phrenic and pneumogastric nerves and the sympathetic nerve was also completely ignored by those who had the opportunity of examining the case, so that not even rectal troubles were thought of as responsible for the fatal malady. Indeed not a druggist or doctor with whom she came in contact in her whole two weeks' search for relief even thought of, or at least suggested, an examination of the pelvic organs with the view of ascertaining their condition, but simply recognized that hiccough was a fatal trouble, and told the woman that her end was near, and that nothing could be done for her, acknowledging themselves perfectly helpless to combat the formidable condition in which she presented herself. It is with no small degree of satisfaction to me, however, that the interne of the institution to which she applied remembered his orificial teachings and was thoughtful enough to give the woman the orificial straw to grasp at, and that she embraced this only opportunity which had been extended to her, and has the satisfaction of securing for her trust and confidence the restoration to health which she was seeking.

Orificial work has scored thousands of professional triumphs of which it can well be proud, but it is seldom that it has scored one more brilliant and encouraging than it accomplished in this case of pernicious hiccough.—*Journal of Orificial Surgery*, March, 1900.

SOME CLINICAL CASES.

By R. B. Leach, M.D.
ST. PAUL, MINN.

One Saturday afternoon, about five o'clock, I was called to my front door to see Mr. W. A. R., who had been driven thirty-two miles, over the rough country roads, while lying (through preference, it's true) on the floor of his wagon bed, and with nothing between himself and the bare boards; wholly incapable of helping himself.

The following is his history: "A week ago last night, while caring for the corpse of my late father-in-law (an allopathic physician), I got right smart overheated, and while still quite wet with sweat, went out doors to cool off, and I reckon I took cold, for the next day I couldn't move a muscle and haven't been able since to help myself in any-way, and am in constant misery."

Through a series of observations and of indirect interrogatories I elicited the following more explicit aid to a prescription:

Patient cannot move his left arm at all and is suffering very greatly; "agonies," as he calls it. Is sore to touch, especially through the left breast, accompanied by some swelling of the left side. He is morose; irritable; has some sore throat, and stitches in the back and the left side, (which side is, apparently, paralyzed); and in his left arm has a "dulled sensation" or feeling as though that arm had been struck on the "funny bone." All symptoms are worse when quiet or when beginning to move, but are relieved after motion is thoroughly established so that he has suffered comparatively little pain since leaving for his long ride, except during the time the team was halted for dinner.

When the prescription in this case is megascopically indicated to us all, and in fact rhus. tox. was almost rubbed into me, I recall this case more especially to lend emphasis to the insinuation that the indicated remedy (i. e., the drug potency equal in intensity to the potency of the causative aura) did in this case, and always will, exemplify the *law;* for this man, within seventy-two hours from taking the first of the nineteen doses in all of the poison oak, was converted from a bedridden and excruciatingly suffering so-called "rheumatic" into a freeholder of a mental and physical equilibrium *in persona,* and consequently into a hearty well-wisher for homœopathy in *perpetuam rei memoriam.*

Case No. 2.—About ten A.M., one Friday, I was called seven miles in the country to see a Mr. G. H., whose history is as follows:

"Monday morning last (I don't remember the hour), I was taken with a chill; which was followed by an intense fever, and this by a profuse perspiration." The same phenomena, I learned, repeated themselves on the next day (Tuesday) this time in the afternoon, and again on Wednesday morning; the fever, in the last instance, however, remaining with no intermission, and but slight abatement, until to-day.

Thursday, at six different times, the patient vomited "almost pure bile," and again to-day about the same character of ejecta at ten different times. Most vomiting to-day, however, was forced by drinking

large draughts of cold water, and then vomiting induced by tickling the throat; the consequent emesis effecting almost instant, though transitory, relief and no perceptible benefit. Patient's bowels moved very often and freely yesterday (Thursday) the dejecta being, as he described it, "as black as tar." Upon physical examination found this patient in the following condition:

Face flushed; eyes injected and pupils dilated; pulse full, strong, and 85 beats per minute, (72 beats per minute being his normal); and temperature 103° Fr.; tongue heavily coated, black down the center with brown stripes down either side; the whole being rather moist and pliable, yet very thick. His bowels are quite painful to touch, and the transverse colon prominent and very painful; abdomen otherwise retracted and more sore and painful; stools are brown or black, moist, and in little balls; no flatus and no tympanitis.

Patient had taken, on Thursday, about sixty grains of quinine sulph. and could scarcely hear when spoken to in an ordinary tone of voice, and suffered the heaviness of the head, and congestive headache concomitant with quinine poisoning. Plumbum, 30x (10 drops in ten teaspoonfuls of water) a teaspoonful dose every five minutes was ordered (continued until easy) and from the second dose patient began to get easy, and after the third dose he felt right smart better; in fact better than he had felt since first taken sick; with the pain leaving the left side, but with the right side still quite sore. Hot enemas (which are quite a desideratum with a certain class of practitioners of whom I am one) were ordered, and within an incredibly short time, my patient was easy; in fact, quite comfortable; and, I have no doubt, would have gone on to a speedy recovery, had I had sense enough to let well enough alone.

About an hour after the third dose of the plumbum (these having been stopped with the subsidence of the pains) my patient seemed, suddenly, to grow worse; i.e., the vomiting of bile was resumed, and accompanied (of course) with the old pains in the abdomen. Friends began to grow anxious and to enquire if I couldn't do something; this was my first visit and threatened to be my last; and forgetting the old saying:—"Is it so true that second thoughts are best; not first nor third, which are but a riper first?" I did something and did it wrong. I changed my prescription to ipec. 3x and, not content with this blunder, alternated this with iris 3x; this to fit the fleeting symptoms, and then, in a short time, in ostrich-like security (my patient having apparently improved) I left for home: "Just seven miles away."

On arriving at my office I at once went over my notes (comparing same with my repertory as was my wont), and at once realized what a mistake had been made, and prepared at once to return to my patient and rectify my mistake before too late. Before I could get away, however, another, and urgent call, came for me to go thirteen miles to the northwest of town and, changing horses, made that visit (bearing to that house my previous experience) and hastening home, eating my dinner at ten P.M., I again got astride my faithful equine companion, and again repaired to the house "Just seven miles away."

The whole story of that egregious blunder by a so-called homœopath would be tiresome; suffice to say that that apparently malarial fever case, even threatening the typhoid, made a rapid recovery indeed when the first and correct prescription had been given fair play, for I left for home that same morning after an early breakfast with the patient's family (who were now well pleased with his condition;) his pulse was quiet and his temperature normal, and a speedy recovery ensued.

The opening of this old wound is made with the hopes that no man present may make a similar mistake from this day forward; that all may be impressed with the importance of giving a remedy time to act; to never "lose your head" and, above all, to remember that if one remedy is indicated, two can not be, for however many remedies may be similiar to the symptoms presenting, only *one* can be the *similimum*.

Case 3.—An interesting headache was the following:—Mrs. J.G.P., was 62 years of age; short and fat; had light blue eyes and light brown hair. She was always "slight" until maturity, at which time she moved from Texas to California where fat accumulated faster than nerve force, causing much discomfort and an excuse for a troublesome dyspepsia; probably the result however, of a sendentary life, and too frequent meals accompanied or followed by large draughts of water.

Headache now is her only trouble, but that is the bane of her life, and for this I was first called to see her after her allopathic attendant, who had treated her during the preceding twelve years, had given up this particular attack of headache in despair.

When called, elicited the above and also that, only a few hours before she had taken, according to direction, considerable medicine of some sort (presumably calomel and Dover's powder and a dose of ergotine); "about the same treatment this time as upon former similar and frequent occasions." Headaches at no stated time; sometimes accompanied with vomitings and sometimes pains so violent,

can not bear even a very light noise or even a little air. Sometimes pain in the small of back, and crampy pains extending from feet to hips (usually on the left side); crampy pains in the ankle joint, cramps in the back and side, between short ribs and hip bones; too sore at these times to flex thigh upon body or to move in any direction.

During these attacks is always blue under the eyes and often blue over whole face (just as though under the influence of whisky which she has often taken); has often suffered (and does even now) with hot hands and hot feet, which she cannot be induced to cover. During this attack, checked or cog-wheel respiration, and frequent sighs, and loose movement of the bowels; (for many years past only effected through the agency of purgatives, cathartics, laxatives or enemas.) Her feet at this time (as always before) so tender she can scarcely bear to step upon them; eyes burn and feel full and "gritty" and ears roar constantly. Large quantities of strong smelling urine passed during all attacks.

Headache, at times, extends down into throat and mouth; feels, at times, as though "might be relieved by drawing off a part of the brain substance;" head full and heavy; presses head hard with her hands, and this, apparently, relieves; sometimes gets relief from combing hair, which is long and heavy; head always feels better when tightly bound.

All symptoms (except of the feet) relieved by motion; worse from rest; sometimes so nervous she jumps out of bed; at times has flushes of heat; tongue usually tastes flat and is coated white; appetite is good at all times, and pulse is always strong and is felt very distinctly by patient, in her temples.

This patient got one dose (one drop) of the fifty-thousandth of sulphur, and this was followed hourly with sac. lac. This attack was relieved before I left the house, and, though these headaches had been recurring almost daily for a considerable time before my visit, there was no return until eight days (and with this there was no return of the bowel troubles, and there has been no constipation following that first and only dose of sulphur, high) when a slight headache, calling for, and receiving, one dose of glonoine 30x, was relieved before I left her, and one more three weeks later calling for, and receiving cactus grand cc., was all the headache she ever had during the following, nearly nine years, of our acquaintance, during all of which I attended her family and never knew her to be sick again with a headache or any other pain.—*Minneapolis Homœopathic Magazine*, March, 1900.

Gleanings from Contemporary Literature.

PRINCIPLES GOVERNING THE APPLICATION OF MEDICINE TO DISEASE.

H. W. PIERSON, M.D., CHICAGO.
Prof. Theory and Practice of Medicine, Dunham Medical College.
Stenographically reported by A. K. WILLIAMS.

We begin this afternoon a study of the *application of the remedy to the case.* You have studied the *nature of disease;* you have studied the *nature of the remedy;* now we come to the application of the remedy for the purpose of curing the disease. In the past, the work has been theoretical. From this time on it is to be extremely practical. There is hardly a question raised that will not be discussed by you in your practice in some case. And some of the questions will be discussed by you in every case. Your acceptance or rejection of these principles will measure the success of your work as physicians. Hahnemann has given us a theory of the nature of disease, and a theory of the way in which remedies are to be applied for the cure of the same. If you accept these theories, if you get a knowledge of the remedies in accordance with the principles he has given you, you must apply the remedy in accordance with the rules and regulations he has given you in order that you may get the results that he affirms should follow. This is logical and natural, and you have no right to expect results unless you comply with the rules. If you reject, or question the truth of these principles it would be well for you to offer in substitution something that is better. If the suggestions offered seem illogical, it is important for you to show the fallacy of the argument. I cannot tell you what to do, or how to make a prescription, and have it be of any value, unless you take that instruction and put it to the practical test, and see for yourself what truth or error is to be found in it. If you simply accept what I give you as truth without investigation you have lost the most valuable part of the instruction. It is for this reason that I court opposition, and am perfectly willing to acknowledge error upon my part at any time any of you may be able to show it to me.

The first question that will be considered may be stated as follows: *What kind of symptoms govern you in the selection of the remedy?* You state that remedies are selected which produce symptoms *similar* to that of the disease under consideration. Now, *what* symptoms under the pathogenesy of that particular drug will govern you in its selection? And you find in § 153 an answer to the question. "The more *striking, singular, uncommon* and *peculiar* signs and symptoms of the case are chiefly and almost solely to be kept in view." Now, how are these to be determined? Read a little further: "For it is more particularly those very similar ones in the list of symptoms of the selected medicine must correspond to, in order to constitute it the most suitable for effecting the cure." If you are to look for the peculiar symptoms that are to govern you in the selection of the remedy, the record of common symptoms is of little practical value; but the common symptoms must be used as the ground work upon which you build, for from them stand out the peculiar characteristics. In the scheme we have given you for making a proving you will notice that we dwelt almost exclusively upon this feature of the record, and this is the reason. It makes little difference whether your record will show one, or twenty pages of common symptoms possessing little or no characteristics, if you give us one symptom, or two or three or more that are characteristic. But it will be difficult for you to get those one, two or three characteristic symptoms

unless you have a good foundation. It is significant that you have a headache and a backache and that there is constipation with it. Still, those are common symptoms. It is significant that there is a loss of appetite with the headache and the constipation. There you get a group, but it is of no value whatever as an indication for a remedy that will be similar to characteristics of striking symptoms; so you must in your record secure *peculiar* symptoms with reference to the headache, with reference to the constipation, with reference to the appetite, etc. And when your case comes to you with these common symptoms it is important that they should be incorporated into the first record in order that you may have a ground work upon which you may make your inquiry with reference to characteristics.

Now, the second question asked: *how are you to secure these peculiar symptoms?* This is answered, by such inquiries as will draw, from the patient, characteristics without giving him a chance to answer the question by yes or no. Guard against it as you would guard a secret. Strive by every means in your power to conceal the motive prompting the question. Make them think and see for themselves, and in that way alone will you be able to get at the peculiar symptoms of the disease. It may tax your ingenuity to become a skilled cross examiner, but the reward will fully compensate for all efforts on your part; and when you come to analyze the remedy under consideration the same rule applies. You may have a page of symptoms, common and uncommon, but when you come to select from that page those symptoms which make up your case, eliminate absolutely every symptom that does not possess these peculiarities. It is important, at this very point, that due emphasis be placed upon the fact that you are to ignore, as much as possible, the indications toward a certain remedy until after your record is completed, because it is human nature to shape the record of your case to conform to some preconceived notion with reference to—to what the remedy should be. And the result will be that you will be liable to get a distorted, imperfect picture of your case, with the consequent result of selecting a remedy that is *not the simillimum.*

There is another question that must be settled by you at this time: *how much dependence should be placed upon the diagnosis of the case?* The messenger calling you to the case will say that Mrs. B. has appendicitis, and you go to the case, make an examination and find that there is tenderness in that portion of the abdomen in which the appendix is supposed to be found. How strong will be the tendency, in the study of your remedies, in the study of the hand book that you may carry in your grip, to turn to that list of remedies to be found under "Appendicitis" and to exclude all other remedies from your mind. It is more than probable that not a single remedy in the whole list ever would produce appendicitis; but some one, wise or otherwise, has gathered together a list of remedies whose pathogenesy shows a tendency to a disturbance, a peculiar disturbance in this particular region of the anatomy, and as a result of his knowledge of disease added to his knowledge of the action of remedies this selection may be a wise one. If you must use a pocket book (and no man should hesitate if he does not *know* the remedy), it is just as easy to get into the habit of so arranging your record that Bœnninghausen's Repertory or some other safe guide will as quickly suggest the remedy as to slide along in a haphazard sort of a manner with the aid of some of the many "*Therapeutic Guides,*" of which the market is over stocked.

Our Materia Medica is of such a nature that it is difficult for any but an expert to select a remedy unless he does make use of some repertory in its selection. An ordinary man, a man with a superficial knowledge of the action of drugs and a more or less superficial knowledge of the nature of disease may be able to select a remedy perfectly fitting the case without these guides, or these aids, but it is simply because his picture of the disease

is superficial, and his picture of the remedy corresponds, and the two work upon the same plane. He makes no use of a repertory because a repertory is designed for *exact* work. He could make probably very good use of his pathological diagnosis, and he would reason that if a remedy produces certain results under a certain amount of use, if it had been carried to a far enough degree it *might have* produced results similar in their organic change or in their pathology to the disease under consideration, but you will note that this conclusion is only reached by means of a great big "if." So it is well for you to be *thorough* in your investigation, by means of which you can arrive at a satisfactory diagnosis, but it is extremely unfortunate if you allow the study—allow the knowledge gained by this material investigation to control, or even guide you in the selection of the remedy that will cure. This is something that you may question. You may seriously, may honestly question the truth of this statement, and point to the overwhelming results that have been obtained under the guise of homœopathic prescribing where the prescribers have been guided almost entirely in their selection of the remedy by the diagnosis, but we want you to do better work and get better results than that which comes from any other form of treatment. So, every time, under all circumstances, eliminate every bit of knowledge that comes to you as a diagnostic point in the examination of your case, and be controlled absolutely by the picture presenting the peculiar characteristics of the disease. Now, the point will be raised right here, in what list will these peculiar symptoms be found? Will they be found in the subjective, in those symptoms of which you have no knowledge except they come to you through the patient, that is, you cannot see the evidence of any of these symptoms by your physical examination or by the observation of externals—or shall you be controlled by what you can see, feel, smell, etc? A patient comes to you presenting a peculiar cast of countenance, an anxious look, a timid, bashful look, or whatever may be the condition—do you not see that it is a characteristic and of great value, although the patient may be absolutely ignorant of it? You may interpret the cause for these different expressions as you will, and the truth or falsity of the interpretation will depend upon the accuracy of the observation. You may see that this look indicates pain, and by closely watching you may attribute it to some trouble about the heart; or, you may see that the peculiar color of the skin would denote some trouble about the liver; or you may see that the absence of color, the paleness, or whatever it may be, may be due to some trouble with the circulation; or it may be due to some trouble with the central nervous organization. But whatever may be the condition, you are to combine these objective signs, with the peculiarities that you find in the subjective, or the symptoms that have been given you by the patient in order that you may get at the true totality. You may run against an obstacle right here. Remember that the pathogenesy of your drug is made up of the records of the provers, to a large degree.

To these have been added observations in cases of poisoning which reveal the *objective* symptoms produced by a limited number of drugs, but you can see at a glance that the relative value of the symptoms produced thereby is not great. You are therefore dependent in a great measure upon the subjective symptoms reported by the provers and in a like manner are dependent upon the patient for a guide to the selection of the remedy.

Let me warn you, at this point, against the danger of becoming *symptomotologists*. There is something more than merely fitting symptoms of the remedy to the symptoms of the case.

The symptoms that are present may be due to the action of the drug and they may be due to extraneous causes, but the symptoms are there, and you are to analyze those symptoms for yourself. You are to build up from this composite picture that picture that will correspond to the particular

case under consideration, and the skill shown by you will measure the accuracy of your observations. Now, when you have the picture made up of the peculiar characteristics of the case there is one point that must be carefully studied by you before you select your remedy, and that is *the part played in this particular disease by outside circumstances, by environment.* Do you get what I mean? A person is sick. You are called to the case. You listen to the report of the patient. You listen to the report of the attendants. You make an examination for yourself. Before you make a prescription it is of the utmost importance that you make an examination into the cause for this. Suppose, for example, that you find the room is filthy, or it is cold, or it is damp, or there is evidence surrounding the whole case that this person has not enough food to eat, or it may be that the person may be surrounded by all the evidences of wealth and still you learn, from something in the history, that the husband, or the wife, is continually fighting, physically or mentally, with the person who is sick. You may find that there is an element of fear, or an element of dread, or an element of antagonism, or an element of jealousy, or an element of hate, or whatever may be the condition, that has gone on day in and day out, week in and week out, until as a result of this continual agitation, continual disturbance, you have a peculiar form of sickness. Now, do you imagine for one moment that you can select a remedy that will overcome the effects of this environment and allow the environment to exist? You may be able to select a remedy that will temporize, that will give enough additional strength to tide over a dangerous combination, but your ultimate result will depend entirely upon the amount of disturbance charged directly to this particular environment, and if you do not take this into consideration before you have selected your remedy you are going to be disappointed—and do you not see what that means? It means that you may go from one remedy to another seeking for something that will lead to the desired result, and still be disappointed. Some one else may come into the case as a result of your failure, and with a word, a single look, be able to get at the secret of the matter, and without giving a particle of medicine be able to accomplish in twenty-four hours what you have failed to accomplish in weeks. You say that these people have a great personality that they are able to properly interpret character.

Well, it is just as important for you to be able to read character as it is for you to read medicine; it is just as important for you to bring your own personality to bear upon each and every case coming to you as it is to bring the personality of some immaterial substance. More so. It is due to this fact that we have such remarkable cures recorded by faith-healers. By people who depend upon their personal magnetism for their stock in trade. You have simply to deal with the effect, and in studying the effect to go back to the cause, to seek by every means in your power to remove it.

Let us make a brief summary of the principles introduced this afternoon.

1—Assuming that Hahnemann's theory of the *dynamic* nature of disease to be true and that *similia similibus curantur* is a *law* governing the selection of the *curative* remedy, it follows that the remedy must be applied in accord with certain definite, fixed principles in order to prove the truth or falsity of these same theories.

2—Only the *striking singular peculiar* signs or symptoms are to be considered. These symptoms are largely *subjective.* They are obtained by such inquiries as will draw from the patient and attendants *all* the *peculiarities* without answering a single question by "yes" or "no," supplemented by personal observations and investigations.

3—*Diagnostic* points are of *no* value from a *therapeutic* stand-point.

4—*Repertories* are of imperative necessity in finding these *peculiar* indications.

5— Remove the *exciting* cause, if from *without*, before attempting *internal* medication if such a thing possible, and promise no *permanent* results until such cause can be eliminated from the case.—*Hahnemannian Advocate*, Feb. 15, 1900.

PLAGUE VIEWED FROM SEVERAL ASPECTS.

An Address Delivered before the South-West London Medical Society on March 14, 1900.

By W. J. SIMPSON, M.D., Aberd., F.R.C.P., Lond.,
Professor of Hygiene, King's College, London.

Pandemic Plague and Endemic Centres.

Six years ago plague was regarded as a disease only of historical interest. Its presence in one or two centres in Persia, India, Arabia, and China was not considered to be of much importance, its continuance there being attributed in the main to the filthy condition under which the inhabitants dwelt which prevented the disease from being completely stamped out. This view took no cognisance of the natural history of plague, or of the rarity of an epidemic disease completely disappearing from every part of the world, or of the existence of other factors besides ordinary sanitary conditions which periodically in the ages give to epidemic diseases a fresh impetus that brings them to the front as active agents. If we are to be guided by historical records it is clear that plague has always been characterised by periods of activity and of quiescence, often disappearing completely from the countries in which it has prevailed for years and not re-appearing for long intervals and then re-appearing in a pandemic form. The last pandemic of plague was in full activity in the seventeenth century and covered a large portion of Asia, Africa, and Europe. Towards the end of the seventeenth century it began to retire and continued in a state of retrocession for 150 years, until in 1845 it disappeared from Egypt which had for many years been an endemic centre. Its cessation in such a centre was considered by some to be a triumph for sanitary science as understood 50 years ago; but it is now known from Arabian sources that similar disappearances have taken place before and that in one of these intervals Egypt was free from plague for at least 300 years. Since 1850 the tendency of plague to fall still lower in the pandemic or epidemic scale has been arrested, and there has been a visible recrudescence, as manifested in the local outbreaks a little over 20 years ago in Asia Minor and on the Volga, and in the extension of plague from Yunnan to Pakhoi about the same time. It is due to these smaller recrudescences that we have become familiar with the old and new endemic centres in Arabia, in Mesopotamia, in Benghasi in Northern Africa, in Ghurwal and Kumaon in India, and in Yunnan in China. It is a remarkable fact, however, that the more the records of plague are studied the more these endemic centres recede and the more certain it becomes that "endemic centre" is only a relative term. There are, so far as can be made out, no permanent homes of plague. Even in Irak in Mesopotamia, the oldest and most permanent home we are acquainted with, plague disappeared for 75 years during the Abbasidic dynasty, and later for 100 years. There are no restricted localities where it can be said that plague has always and perennially existed. The endemic centres shift from one locality to another. Sometimes they are in the highlands and at others in the lowlands. On the strength of plague being endemic in Egypt and Mesopotamia for so many centuries the theory was held that plague took its origin in the low-lying marshes and inundated lands of these countries and that these were the conditions necessary for its

annual reproduction. To-day this can be no longer exclusively held, for the present endemic centres of plague are in the highlands of Arabia, India, and China.

The Chinese endemic centre in Yunnan, from which the present pandemic is derived, is between 5000 and 7000 feet high. It has been known as an endemic centre of plague since 1870, but there are Chinese records which seem to indicate that the disease probably existed there over 100 years ago, for mention is made in the last years of last century of a strange and fatal rat disease occurring which also affected the inhabitants. There are no records discovered which make the endemic centre older than this, and there is no evidence to show that the Black Death of 1348 arose from Yunnan. M. Rocher, who first drew attention to Yunnan as an endemic centre of plague, is of opinion that it was first introduced before 1840 by Mohammedan pilgrims returning by Burmah from the Hedjaz, and that it has continued to be endemic in that province since. A notable fact connected with this centre is that notwithstanding the backward condition of sanitation in China the tendency of plague to spread from Yunnan has been so slight, even in the presence of a large rebellion in the province, that it has taken more than 50 years to pass from Yunnan to Canton, a distance of not more than 1000 miles. For several years previously to its arrival in Canton it had spread to smaller towns but had never assumed any large epidemic proportions. In 1894, however, the disease obtained a thorough hold of Canton and destroyed in a short time 80,000 of its inhabitants out of 1,000,000. Since 1894 plague has prevailed more or less in Northern and Southern China, Formosa, Japan, India, the Philippines, Honolulu, the Mauritius, Jeddah, Alexandria, and Oporto, and has made its appearance in Southern and Central America, on the eastern coast of South Africa, and in Australia. True, it is only in India, China, Formosa, and the Mauritius that plague has assumed an epidemic form of any dimensions but its expansion over different parts of the world is a fact the significance of which has to be carefully considered and the importance of which is not to be minimised by its apparent powerlessness to cause a destructive epidemic. The general mildness and circumscribed limitations of the indigenous cases which have sprung up outside Asia in those places into which plague has been imported tend to give rise to the impression that the plague no longer possesses, except among Asiatic races, its power of mischief, but against this is to be pointed out the fact that, with the exception of the Black Death in the fourteenth century the ordinary behaviour of plague in new localities is slow and insidious, and that its hold on a locality is not necessarily to be measured by the effect produced on its first arrival or even on its second or third manifestation. We have a good illustration of this in Calcutta, in which plague cases have existed on and off since 1896, and it is only now in 1900 that the cases are beginning to assume higher proportions. The Great Plague of London, again, was but the culminating stage of several previous epidemics occurring at various intervals of time over some 70 years, none of which were free from a few cases of plague. As in a localised epidemic, even when severe, the disease is noticed to confine its energy in the early stages to a small portion of a city and but slightly to affect districts distant from this centre until a considerable time has elapsed or perhaps not until the plague has disappeared altogether from the locality first affected, so also plague in its epidemic or pandemic form sometimes advances in a similarly halting fashion, acquiring slowly and gradually a sure foundation for its future progress wherever conditions exist favourable to its development.

Some Causes of Obscurity as Regards Mode of Extension.

Modern systems of rapid communication by which intelligence of events occurring in different parts of the world become quickly known, combined

with a more accurate knowledge of the disease, place us to-day in a much more advantageous position for watching the broadcast sowing of the seed preparatory to its ripening than was possible in the olden days, and probably it is to the absence of this means of intelligence in past times that so much confusion arose regarding the sources and origin of epidemics. But even with the advantages named it is a curious fact that the manner in which a locality becomes infected can seldom be determined, and in the investigations which have been carried out to decide this question the cases which were supposed to be the first are almost invariably found to be preceded by other cases until the record goes back to a time when nothing can be definitely settled. Bombay, Alexandria, and Oporto are examples. There can be no doubt that the disease was imported into these towns, but when and in what way are unknown. Conjecture has always to fill up the gap unless in those exceptional cases in which the imported disease catches on immediately. Investigation on systematic lines will alone clear up satisfactorily these obscurities. In the meantime the mystery attaching to the origin of plague in many localities may be partly explained by the fact that until recently the various types of plague were not clearly defined and consequently easily escaped recognition, and partly to the fact that the disease is disseminated by animals, especially rats. These are factors which certainly play an important rôle in the spread of this insidious disease.

Of the varieties of plague the ambulant, the fulminating, and the pneumonic are the most difficult to diagnose. The ambulant is apt to be overlooked because of the mildness of the symptoms. There are slight fever, malaise, headache, congested eyes, and a glandular swelling, but the sickness is often short in duration and does not attract any particular attention. The fulminating type and the pneumonic type are severe and fatal forms of plague, often without buboes and are specially likely to be taken for other diseases, the latter being mistaken for some severe affection of the lungs. An acquaintance with the fact that there are different types of plague does not assist to any great extent unless these types are diagnosed when met with and it must be confessed that owing to the deceptive characters which they assume there is great risk of them being not recognised.

The importance of the dissemination of plague by rats is only gradually being appreciated. It is a well-attested fact and has in numerous localities been the precursor of an extensive outbreak. The rat plague is also slow in its progress and it must not be imagined that it is just previously to the rats dying in their hundreds and thousands that plague is imported into the locality; the origin has to be sought at a much earlier period when mortality occurs only among one or more rats in groups. It was a well-known fact among the ancient Hindoos that when rats began to die in a house it was time for the inmates to leave their abode. Rats when they sicken with plague leave their holes and come out into the open. They look ill and are in a dazed condition, their eyes are watery and bleary, their coats are partially deprived of hair, and they hobble about with difficulty and stagger and fall. They make very little attempt to escape when approached and their behaviour is so extraordinarily different from what is usual that the illness from which they are suffering may be at once suspected. The glands of plague-infected rats are enlarged and these, together with the internal organs and blood, contain plague bacilli. It is not safe to handle rats which are either suffering, or have recently died, from plague.

It has been a decided advance in our knowledge to learn that there are varieties of plague, that they are not easily recognised, and that rats are susceptible to plague and are disseminators of it, and the want of that knowledge accounts in no small measure for the frequent failure to determine precisely either the means by which or the time at which, plague is

introduced into a locality. Plague has often been connected with the corn ships of an infected country reaching a healthy port. When not brought by infected men or their personal effects there can be but little doubt that the infection was not in the corn but in the rats amongst the corn.

Special Danger to other Countries during the Early and Late Stages of an Epidemic.

Great importance has always been attached to the danger of the extension of plague when a town is in the throes of an epidemic, but probably there is more danger to countries communicating by sea with an infected port at the beginning or decline of an epidemic than when it is at its height and everyone is in a state of alarm and strict precautions are taken both at the infected port and the healthy port. In the early stages, while there is no suspicion of the disease existing, the infection may readily be transported to other countries, and it depends on whether the imported cases are at once recognised or not as to the disease having a chance of being disseminated. In September, 1896, two cases of plague occurred at the London Docks in ships that left India before plague was even suspected to exist in that country. Early recognition prevented extension. Let us suppose for a moment that the disease had not been recognised and, having found a favourable soil, had spread ; then the simultaneous or almost simultaneous appearance of plague in London and Bombay would have perplexed everyone. In 1899 three cases of plague occurred in Asuncion in Paraguay among Portuguese sailors who arrived from Oporto nearly two months before the disease was suspected to exist in Portugal. The disease was not recognised as plague, and if suspicion had not been aroused that one of the cases was yellow fever, for which the authorities were at that time on the watch as it was present in Buenos Ayres, the two deaths would have passed unnoticed and the clue to subsequent events would have been lost. As these cases are interesting from a diagnostic point of view and illustrate the case with which a centre of infection can be established, I shall give a short account of them.

The first case at Asunçion showed a glandular enlargement and some obscure lung affection, death being attributed to disease of the lungs. The second case showed symptoms believed by one medical man to be those of acute gastritis and by another to be those of a general infection, possibly yellow fever. It was because of this latter opinion that several distinguished physicians were sent to attend the post-mortem examination in order to decide the question, as it was of importance that if the disease were yellow fever precautionary measures to prevent its spread should be immediately adopted. The necropsy revealed general congestion of the internal organs, hæmorrhagic swellings in the spleen, an enlarged liver, an acute gastro-enteritis. The conclusion arrived at was that it was not a case of yellow fever. No one, however, suspected plague, which was unknown in America and which was not known to be nearer than Egypt. The third case, which came off the same ship, was that of a sailor who went to a small village at some distance from Asunçion. He was taken ill there and five months afterwards, on his return to Asunçion, he was found on examination to have the signs still upon him of buboes characteristic of plague. The three cases are excellent examples of the uncertainty of the diagnosis of plague when no suspicion of plague is in the mind of the medical man. The true significance of these cases in Asunçion was not realised until five months afterwards and then only when a new disease, distinguished by symptoms resembling typhus fever, meningitis, and pneumonia, and frequently accompanied by glandular enlargements in the groin, axilla, or neck, had appeared and prevailed, first of all in a sporadic form in the town for about two months, and later in an epidemic form in the barracks. Only gradually was the suspicion aroused that the disease

might be plague, and once that suspicion became general, the discovery, isolation, and culture of the plague bacillus, the classical symptoms of plague which many of the cases presented, and the no less characteristic anatomical features which was observed at the post-mortem examination cleared away every possible doubt. In an investigation which followed this discovery no difficulty was experienced in tracing the new disease back to its commencement; nor was there any difficulty in recognising the symptoms and post-mortem appearances which had perplexed the medical men six months previously as belonging to true cases of plague though the cases appeared at a time when plague in Oporto, where they came from, was not even suspected to exist.

The Importance of the Asunçion Outbreak.

Even when plague has acquired a firm hold on a locality it is almost impossible to prognosticate its course. Local outbreaks vary exceedingly in their intensity and extent. They may be rapidly spreading and fatal, or they may be exceedingly slow in their extension, and they may be deadly or benign in their character. In Canton the disease rapidly spread, destroyed a large number of the inhabitants in about seven months, and then declined, not to re-appear in the following years. In Bombay it has continued year after year in a less intense form than in Canton, but has managed to destroy nearly as many inhabitants. In Calcutta it has been comparatively mild but is slowly becoming more intense. In Jeddah, Alexandria, and Oporto the first outbreak has been extremely limited in its nature. In Asunçion plague never assumed the dimensions of a large epidemic. 300 deaths in all would probably cover the extent of the outbreak, and it has been of a mild nature, many of the cases being of the ambulant form, with simple glandular enlargement and no serious illness. Even the severe cases did not present a higher mortality than 50 per cent., which contrasts favourably with the mortality in India and China of 80 per cent. The importance of the outbreak of plague at Asunçion does not consist in the small mortality and comparative insignificance of the numbers attacked, but in the fact that plague has acquired in this locality a centre for its diffusion to other parts of the American continent. The disease has spread without hindrance to Buenos Ayres, to Santos, to Rosario, and to Central America, and the outlook is serious because a continent never known to have been visited by plague is now infected in several localities. Nor is it likely that the infection will be limited even to America, for the infected ports in that country are now a fresh source of danger to other parts of the world as evidenced by the recent occurrence of plague at Cape Town on board of a vessel recently arrived from Rosario.

The Diagnosis of Plague.

As previously stated the difficulty of diagnosis of plague arises from the several types and forms which it assumes, and unless the medical man is on the alert for plague and is fully conversant with the types the disease may easily at the commencement escape attention. In Bombay some of the earlier cases, with swollen cervical glands and throat symptoms, were mistaken for diphtheria. In Jeddah, when lung symptoms predominated, the earlier cases were taken for influenza; and in Calcutta, where the ambulant or mild form with buboes occurred, some of them were attributed to syphilis, other to non-venereal buboes or malaria, and others to injury due to a strain or accident. It will thus be evident that a disease which may be mistaken for yellow fever, gastro-enteritis, typhus fever, diphtheria, influenza, syphilis, malaria, and parotitis is one in which diagnosis from clinical symptoms alone is by no means easy.

The two most perplexing forms of plague are the ambulant and the pneumonic. The ordinary bubonic form has, as a rule, very characteristic

symptoms. There are certain symptoms which are common to all severe forms of plague. These are the peculiar expression of the face, the halting speech, the appearance of the tongue, and the staggering gait. The countenance in the early stages depicts anxiety and distress, in the later stages resignation and apathy. When delirium is present the expression may be one of terror. The eyes are red and congested, the conjuctivæ being injected, but there is no photophobia. The patient has the appearance of being under the influence of a hypnotic, yet he is awake with eyes wide open. The speech is stuttering, thick, lisping, and indistinct, often like that of a drunken man. When spoken to the patient often begins a sentence and forgets to finish it. The tongue is early coated with a whitish fur except at the tip and the edges, which are irritable and red. The gait is staggering, sometimes like that of a drunken man, and owing to giddiness there is a great tendency for the patient to fall. From this description it will not be surprising to hear that on occasions an individual with plague has been mistaken for a drunkard and has fallen into the hands of the police. In many plague patients there is a desire to wander and there is great difficulty in keeping them in bed. This desire to wander is attended with great danger to the patient owing to the condition of the heart causing a faint which may never be recovered from.

When fever and the peculiar physiognomy, hesitating speech, staggering gait, and condition of the tongue are met with an examination should be made for the presence of buboes or of lung disease and these should be supplemented by an examination of buboes, blood, and sputum for bacilli. The ordinary bubonic plague is unlikely to be confused with other diseases, the symptoms being well defined. There may or may not be any premonitory symptoms such as malaise and rigors. It most usually begins with sudden fever, rising to 103° F., to 104°, or even to 105, with nausea, vomiting, and severe and intense headache, mostly frontal or occipital in its seat. The eyes are suffused and congested, there is great giddiness, and the tongue is furred, except at the tip and the edges. None of these symptoms distinguish it specially from the onset of some other acute infections, but contemporaneously with the fever, or soon after its appearance, intense pain is felt in the groin, the armpit, or the neck, and at the seat of the pain one or more of the glands will be noticed to be swollen and to be particularly painful on pressure. In the course of 12 hours or even in a shorter time the swelling rapidly increases in size, caused by a periglandular effusion which may be very profuse or only moderate in extent, and the bubo which is thus formed is somewhat doughy to the touch on the surface and of a hard consistense in the deeper tissues. This bubo, with the other signs, is pathognomonic of plague. It is filled with plague bacilli. The bubo varies in size and consists of one or more inflamed lymphatic glands from which exudes a sero-sanguinolent effusion which mats together the neighbouring glands into a hard mass and infiltrates the tissues around, rendering them firm and œdematous. The œdema may be scanty or profuse and in the cervical region it may be so great as to be a serious danger to the patient, and by pressure produce stridulant respiration. In the groin the bubo may reach the size of a man's fist and may extend into the iliac region, affecting the chain of glands in the abdominal cavity and forming a hard tumour to be felt through the abdominal wall. In the axilla the bubo often occludes the axillary space, and the infiltration may become so extensive and organised as to form a hard mass which may interfere with the respiratory movements or become a dangerous slough. The position in bed is always one which tends to relieve as much as possible any tension on the bubo. Ordinarily consciousness is retained, but even apparently with the most perfect conciousness the intellect seems slow in answering questions, the words or sentences being articulated in a

hesitating manner, each syllable being pronounced slowly or the speech is staccato in character and uttered in a hurried and irritable tone. The temperature is not characteristic. It may reach its maximum in a day or two or not until the fourth day. It is of a remittent nature and in favourable cases begins to decline on the sixth and seventh day and reaches the normal on the tenth day. The symptoms usually attain their height on the fourth day. Restlessness, with desire to get out of bed and wander, is often a prominent symptom. Dyspnœa and delirium of a quiet or a noisy nature set in, followed in unfavourable cases by coma and gradual or sudden failure of the heart's action. The pulse, which is soft and easily compressible at the outset, becomes intermittent and dicrotic and often difficult to count, and the patient's extremities become cold and clammy. Recovery usually sets in about the sixth or seventh day, but no prognosis is safe in the early days of illness. The bubo resolves or more frequently suppurates. By puncturing the bubo even at the earliest stage a small quantity of the gelatinous contents can be sucked out with a sterilised glass pipette guarded at the mouth end by sterilised cotton-wool. If the contents so obtained are then spread out on a glass slide or cover-glass, gently heated as in the ordinary preparation of a microscopical specimen, coloured with carbol fuchsin or gentian violet, and then examined by a 1-12th oil immersion lens, the field will be seen to be covered with cocco-bacilli or diplo-bacteria, large numbers of them being more deeply stained at the ends than in the centre. No other disease with swollen lymphatic glands presents microbes such as these. Their presence is sufficient to arouse the greatest suspicion, at any time, and the material ought at once to be taken to a laboratory where the bacilli can be cultivated and the confirmatory tests applied. When plague is known to prevail in a country the discovery of bacilli by microscopical examination, combined with the clinical features, is sufficient to make the diagnosis of plague a certainty.

In the fulminating, septic, and pneumonic types of the disease in which no buboes may be found, an examination of the blood and sputum for the characteristic bacilli is the chief diagnostic test. In the septic type the bacilli early invade the blood and the patient is prostrated with the intensity and amount of the poison which has penetrated into the system. Besides the common symptoms belonging to all forms of plague this type is characterised by a pallid and apathetic expression and a rapid setting in of extreme nervous prostration, delirium, coma, and death, the patient often suffering from hæmorrhages from the nose, kidneys, or bowels. In the pneumonic type the bacilli are to be detected in the sputum, the disease localising itself at first in the lungs. The symptoms are those of a broncho-pneumonia with much greater prostration. Dyspnœa, cough, and expectoration of a watery fluid tinged with blood are the chief clinical features. The physical signs are moist sounds at the base of the lungs, and the pulse and respiration are rapid, but there is not the same disproportion in their ratios as is observed in acute pneumonia. The patient usually dies on the fourth or fifth day. This type is the most infectious, the sputum teeming with the bacilli ; it corresponds with the Black Death of 1348.

The post-mortem characters of all varieties of plague are distinguished by congestions and by small and large hæmorrhages of the internal organs and venous system, and by the presence of plague bacilli in the enlarged lymphatic glands and the serous or sanguinolent exudation around them, in the blood, spleen, liver, bile, urine, peritoneal fluid, and fluid of the brain. It is this universality of the plague bacillus which causes the corpses of persons who have died from this disease to be dangerous and renders it imperative that special precautions shall be taken immediately death takes place to prevent the spread of the infection. A sheet dipped

in corrosive sublimate of the strength of 1 in 500 should be wrapped round the body.

The Treatment of Plague.

A plague epidemic soon dispels any faith in the old methods of curative treatment. Good nursing and stimulants will do much for the patient, but the struggle is between the natural powers of the patient and the weakness or virulence of the microbe. Neutralisation of the toxin and destruction of the plague bacillus without harm to the patient are the rational objects to be aimed at in treating a plague patient and these are not attained by any of the ordinary pharmacopœial drugs. The only known method attempting to deal with the problem is serum-therapy and though Yersin's serum has fallen into disrepute since its failure, or comparative failure, in Bombay, yet it appears to me that it is on that system, or some allied system that we may hope to make any advance in the treatment of plague. An explanation of the success of Yersin's serum in the few cases in China, where in 21 cases it gave a mortality of 7 per cent., and its failure in Bombay may possibly be due to the different methods employed in the preparation of the Chinese serum and the Bombay serum. At least that is the view of the Pasteur Institute and until it is otherwise proven may, I think, be accepted. The Chinese serum was obtained from the horse by injecting it with living and virulent cultures of the plague microbes, but owing to the dangers attendant on the method the Bombay serum was prepared by injecting dead cultures. Of late a return in part to the original method of preparation has been made and the serum as now supplied from the Pasteur laboratory is obtained by injecting horses, first of all with dead cultures and then with living and virulent cultures. This is the serum that was used in the recent outbreak of plague at Oporto. Dr. Calmette and Dr. Salimbeni have published the results of their investigation into the efficacy of the serum as ascertained by them in the treatment of patients at Oporto, and there can be no doubt, as the statistics stand, that the result is highly in favour of the value of the serum. This statement, however, requires qualification, owing to the fact that the comparison is not made between patients treated in hospital with serum and patient not treated with serum, but between patients treated in hospital with serum and patients treated at home without serum. The experiment is accordingly not under the same conditions, but the results are so dissimilar that it is impossible not to give the serum considerable credit for the contrast. It appears that out of 142 cases treated with the serum in hospital 21 of the patients died, which is equal to a mortality of 14·78 per cent., while out of 72 cases treated at home without serum 46 of the patients died, which is equal to a mortality of 63·72 per cent.—i.e., the mortality in hospital was five times less than the mortality at home. Success seems to have been more certain when the serum was used in large doses and when employed intravenously; thus the best results were obtained when, at the beginning of the illness or as soon as the patient came under observation, an intravenous injection of 20 cubic centimetres of the serum was given followed by two subcutaneous injections of 40 cubic centimetres each in the first 24 hours and by subcutaneous injection of from 10 to 20 cubic centimetres or 40 cubic centimetres on the next and subsequent days until the temperature fell to normal, and even for two days afterwards. No ill results ensued from these injections further than an occasional erythema and articular pains which were no more intense after the intravenous than after the subcutaneous injections.

Preventive Measures.

Of preventive measures for the medical attendant, the nurse, and the relatives who may have close association with plague patients the most

important is Haffkine's plague prophylactic. Of preventive measures for a country, in addition to those recommended by the Venice Convention and the destruction of rats, the most important is that its medical men, especially its port health officers and medical officers of health, should be able to recognise plague when they see it, and for this purpose I would recommend that the same methods be adopted in England as in Germany—viz., that under the auspices of the Government there should be instituted a course of instruction on plague to be attended in batches by the medical officials of the country.—*Lancet*, April 14, 1900.

Acknowledgments.

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SULPHUR AND SELENIUM.

(From the French of Dr. Piedvache in L'Art Medical of April 1900, quoted from Review Française d'Homœopathie.)

SULPHUR.

Homœopathic Therapeutics uses pure Sulphur to the exclusion of the alkaline sulphides (the bases of sulphurous mineral waters), of sulphurous and hydrosulphuric acids. Triturations are made of it to medium potencies from which liquid dilutions are run up. The mother tincture of Sulphur is itself a dilution, at least equal to the third. But what we know of sulphurous mineral waters perfectly agrees with the Hahnemannian pathogenesis. Sulphur is one of our most important medicines, the relations of which with Hepar Sulphuris we shall have to study later on.

There is very little of toxicology proper of Sulphur itself: It has produced diarrhœa, and we find hydrosulphuric acid (sulphuretted hydrogen) in all the secretions, except the urine which eliminates the metalloid in the state of sulphates. Sulphurous acid, on the contrary, mixed with the inspired air, causes ophthalmia, acute bronchitis, and pneumonia. In sufficient quantity, and in a confined atmosphere it produces asphyxia from spasm of the glottis.

As for Hydrosulphuric Acid (the gas of drains of water closets) the accidents from it are common. In moderate dose headache, vertigo, pallor of the face, feeble and frequent pulse, nausea, colic, diarrhœa, special ophthalmias. With a very large proportion of the gas in air: Accelerated afterwards slow respiration, feeble cardiac contractions, slow pulse; loss of consciousness, general convulsions, dilated pupils; asphyxia from respiratory paralysis.

Polychrest of the first order, Sulphur acts always specially upon the skin and mucous membranes. Its analogues are Lycopodium, Pulsatilla, Phosphorus, Calcarea, Natrum Muriaticum, without counting its nearest neighbour, Hepar Sulphuris.

It has been said of it that it was the pivot of our materia medica, and the grand characteristic of its employment is the feebleness and slowness of reaction. It is always useful in acute and chronic diseases when the best selected remedies disappoint. Psora, such as Hahnemann understood it, has had its time; but what remains are the facts: The existence of old eruptions, and habitual itching are the admirable characteristics of Sulphur. It is further indicated by a special temperament: red lips, redness of other orifices, and particularly of the margins of the eyelids, orifices which are painful and burning; clear complexion, fœtid odor of the perspiration, great inclination for alcoholic drinks, general delicacy, and bent gait from feebleness of the vertebral column.

The venous plethora, common to hæmorrhoidal subjects, is a further indication for the selection of Sulphur; as also the tendency to congestions: redness of the face and congestion of the head, sensation of afflux of blood to the heart especially at night, with violent palpitations, suffocation, and immediate necessity for air. This characteristic does not respond to the flushes of menopause, but to those of chlorosis: There is in fact the same tendency to coldness of the extremities, and the sensation of fainting at the epigastrium (Comp. Lachesis). We shall compare with it Lachesis under this relation later on.

With Sulphur, emaciation goes to marasmus; it is analogous to that of Iodine and marine (common) salt. The resemblance with Iodine is completed by chronic adenitis. Hence it is a precious help in the marasmus of infants (comp. Calcarea and Phosphorus).

It is claimed that Sulphur is differentiated by three symptoms: Violent hunger; aggravation of all the symptoms at 11 o'clock in the morning; heat of the crown of the head with cold feet. Whatever this may be, it is easy to deduce the application of Sulphur to scrofulosis and tuberculosis.

To complete the general physiognomy of the medicament we add the moral symptoms: patient anxious, pusillanimous having fear of every thing and person, with moreover violent fits of passion; sluggishness of the spirit alternating with excessive irritability. Such tendencies are found in the hæmorrhoidal and gouty subjects.

To resume. The action of Sulphur is seen upon the whole of the vegetative functions; but this action is less profound than that of Phosphorus and of Arsenic. Here are the differences between the metalloids: Sulphur attacks more the capillary network and the vasomotor nerves, Arsenic and Phosphorus upon the cells. Perhaps it is because of this that the action of the first, though often decisive, appears ordinarily to be less deep. Since the lesions of the skin dominate the pathogenesis and the therapeutics of Sulphur, let us see what distinguish them. The most important characteristic is pruritus; instead of being painful and burning as in that of Arsenic, there is something of the voluptuous and irresistible in it; it is nocturnal, tingling as in Aconite, burning only after scratching. Sweat comes on easily and is sometimes accompanied by red miliary sudamina. The odor of the sweat is fœtid as already stated. Sulphur causes urticaria, furuncles, acne, eczema and impetigo, erythema in large patches desquamating abundantly. The humid eruptious nevertheless preponderate over the dry ones, which is the opposite of *Arsenic*. The acne is characteristic, the cracks frequent and bleeding. Alopecia is also to be noted. This is in short the picture of the scrofulides rather than of the herpedes. Why then did Bazin, the greatest authority in dermatology, almost proscribe sulphurous waters? Because nothing is so difficult as the administration of sulphurous waters, because the abuse of dose goes beyond limits, and because, under these conditions, aggravation is the rule. Another reason is that Sulphur, very valuable in crusta lactea and in the impetigo of infants, rarely suffices in the cure of eczema, though frequently it may be necessary to give it an

impetus. Clinical experience nevertheless establishes its efficacy in old syphilitic eruptions.

Upon the mucous membranes the action of Sulphur is required by all varieties of catarrhs dry or humid, rebellious and tending to chronicity, having affinity more with scrofula than with any other disease: ulcerative and scabby coryza, with red and clammy swelling of the nose, secretion of fœtid smell; external suppurative otitis; ciliary blepharitis; eczema of the eyelids; papular or pustular conjunctivitis, accompanied with considerable photophobia; still deeper effects of the eye; ulcerative keratitis, iritis, opacity of the vitreous body, asthenopia. In all cases of ocular affections, it is necessary to note the nocturnal aggravation, the sensation of a sharp foreign body, as of a fragment of glass, and the fear of even a drop of water touching the eye or the face (comp. Conium).

Sulphur has been observed to produce painful urethral discharge, hence its good effects in obstinate gonorrhœa. It has produced copious and excoriating leucorrhœa which accounts for its use in the leucorrhœa of scrofulous young women. Conium is here also the principal concurrent remedy.

We have said that the action of Sulphur upon the circulation is one of the most important, as marked in apparent plethora due to vaso-motor troubles and to the fulness of the portal vein habitual in hæmorrhoidal subjects. Hence in these the medicine is of frequent use, whether it be to combat the inflamed and painful hæmorrhoids which are found in its pathogenesis (Comp. Nux, Aesc., Ars.), or to correct the various congestive states in connection with them, such as cephalalgia with dark redness of the face and buzzing in the ears; congestion of the lungs followed by hæmoptysis and accompanied with palpitations of the heart, full and accelerated pulse, augmentation of the arterial tension, violent sense of imminent suffocation; in all cases, the afflux of blood to the skin, under the least influence, is quite a characteristic.

Besides the bleeding hæmorrhoids, we notice other hæmorrhages, especially epistaxis; but these are transient and superficial like the congestions which cause them. On the other hand amœnorrœa is an effect of continued doses and completes the picture of chlorosis (comp. Puls.). The hæmorrhages due to

Sulphur are so well known that they are generally looked upon, very wrongly, however, as contraindications of sulphurous waters.

The circulatory troubles comprise accessions of febrile intermittents, characterised by predominance of chill, continual horripilation, flushes of heat and nocturnal sweats (comp. Silicea).

The respiratory apparatus is one of the most affected by Sulphur: aphonia with smarting and sensation of excoriation in the larynx, aggravation by moist cold (laryngeal phthisis, comp. Phos., Ac. nitr., Hepar., Arg. nitr.). The cough is dry, short, convulsive, continuous, principally nocturnal, provoked, as in Conium, by deep inspirations and by talking, causing shocks to the head and the chest. The cough at other times is moist, with greenish expectoration having the taste of rotten eggs. The nocturnal cough ceases only when he raises himself to sit up. (Comp. Hyosc.)

This is an efficacious remedy in *active pulmonary congestions* of which the type associated with warm eruptions offers the most faithful picture. The medicaments for *pneumonia* are almost the same as those for pulmonary congestion (comp. Bry., Phosph., Ipec., Tart. em., &c.). Sulphur should have long been proposed for the former. Our American confrères have even thought that it can jugulate pneumonia at the beginning; but the possibility of jugulation of an acute cyclic disease is without doubt determined in the negative. What clinical experience teaches us, is the extreme resemblance, in this circumstance, with Phosphorus and the difficulty of their differentiation. Farrington eulogizes Sulphur in pneumonia with excessive prostration having the appearance of typhoid, and when the resolution is slow to make its appearance, when one fears consecutive tuberculosis. Ludovic de Parseval has recourse to it in cases where we employ Phosphorus and at the same time with undoubted success. I believe, however, that it is necessary to take account of indicative signs from the materia medica, and call to mind with Dr. P. Jousset *violent fever, face red and swollen,* and *profuse sweats.* If I am permitted to invoke my personal experience, I will say that I have evidently succeeded with Sulphur in cases where Phosphorus has modified the course of the disease, or at the very first onset of the grave forms which have presented the three symptoms of Dr. Jousset. I have seen equally frequently that

in broncho-pneumonia of measles, Sulphur causes the disappearance in a few days of patches of splenization dating from several weeks, at the same time that the fever subsided definitely (Dose, 12 to 30 centigrammes). In pleurisy the symptoms for its employment are: stiches in the sides exceedingly acute traversing the chest from the left nipple to the back, aggravated by the least movement, excessive effusion, especially after failure of other remedies.

The conditions for the employment of Sulphur in chronic Bronchitis are enormous accumulation of muco-pus, suffocations from cough, with palpitations of the heart, the provocation of the cough from the horizontal position, nocturnal fever and the congestive state of the face (Comp. Tart. em.).

In phthisis, Sulphur is often useful in the beginning, by preference in the congestive phases as we have said, and also in the third stage (as in chronic bronchitis, indicated by fever and noctural sweats: comp. Silicea).

It is not to be expected that we should give here the rules for the use of the thermal sulphurous waters; I would content myself to say, in the beginning, that acute diseases are out of the question, and that in chronic respiratory affections, the indications given above ought to suffice, the doses being the smaller and the suspension (discontinuance) the more necessary the more the diseased process is acute. It is thus that with the waters of Bonne obstinate hæmoptysis may be cured, notwithstanding what has been said.

If we pass on to the nervous system, we see in the beginning that vertigo is sufficiently characteristic; it is produced while walking, accompanied by nausea with tendency to fall forward or on the side. Calcarea Carbonica differs very little in this. Cephalalgia has been already spoken of as being of a congestive character; there are pulsations in the head with marked aggravation from stooping and from movement. Accordingly clinical experience has demonstrated the good effects of this medicine in the tendency to hydrocephalus in infants and even in meningitis of the second period, when these general characteristics exist. In all cases the tardy closure of the fontenelles in infancy is an excellent indication for Sulphur.

It is a remedy for various neuralgias, especially those which

are periodic, aggravated in the evening, at night, and by cold, ameliorated by heat (as Ars.). There is a marked predilection for the left side; there are restlessness, frightful dreams, night mare. If we add to these, hebetude, stammering, we understand at once why it renders service in congestive attacks in dementia and general paralysis. The resemblance with paralytic dementia is completed by incoherent delirium, by illusions of vision, by ideas of grandeur, of opulence. Then come, in order of similitude, lipemania with stupor and hypochondriac delirium; epileptiform convulsions; choreaic trembling; paresis with tremor of the limbs, hasty steps, indicating it for diffuse peri-encephalitis.

Sulphur, I have said, is suitable for the gouty, and its effects upon the locomotor apparatus justify this suitability; it produces, in fact, arthritis of the big toe, accompanied with very acute pain, swelling and dark redness of the articulation: we add to this the signs of dry arthritis. If it is true that this justifies the treatment of chronic arthritis and white swellings with baths of sulphurous waters, we find it better still to use internally attenuations more or less high.

I finish with the digestive apparatus, by enumerating the following symptoms: Aphthous stomatitis; excessive thirst which is not always relieved by drinking (comp. Ars.); want of appetite, or bulimia; tonsillitis, chronic catarrh of the pharynx with dryness, scraping, sensation of a foreign body, spasmodic contraction; the successful employment of Enghien waters in these cases is therefore perfectly homœopathic.

The gastralgia is intense, proceeding by long attacks, and is on a par with dyspepsia, of which the peculiarities are: Redness of the countenance and dull cephalalgia immediately after meals, chilliness, palpitations, dyspnœa, intense pyrosis; sensitiveness to touch, swelling of the abdomen, eructations suphurous or acid, alternation of diarrhœa and constipation, congestion and tumefaction of the liver. Pyrosis is the symptom which best distinguishes Sulphur from Nux. Same suitability moreover to hæmorrhoidal and alcoholic subjects. Clinical experience has also proved its utility in sea-sickness, vomiting of pregnancy, dyspepsia which follows a milk diet, chronic enlargements of the liver with or without ascites, peritonitis, inflamation of the

transverse colon when the pain is aggravated by bending forward. It is a good medicine for habitual constipation (when there is agreement of general conditions of health) and, as we have often to be astonished in homœopathy, for the opposite condition, diarrhœa, and the diarrhœa, for which Sulphur is indicated, is of two varieties,—diarrhœa in the morning (comp. Bryo., Phos. Diosc.), and lienteria (comp. Phos., China, Ferr., Oleand.) Sulphur has been said to be preventive of cholera in epidemic times.

In almost all abdominal sufferings, where Nux is indicated, the action of this remedy is happily completed by Sulphur administered after it.

As for the dose, it is variable. But it should not be forgotten that it is one of those medicines which are best suited in infinitesimal doses and in which it gives the greatest success.

SELENIUM.

Isomorphous with Sulphur, Selenium resembles it not less as a medicine, and its rôle of succedaneum or substitute may be expected in all the spheres of action of its congener. It is perhaps not less analogous to Phosphorus. We shall lay stress only upon two seats of elective action of this metalloid—the larynx and the nervous system.

The voice is obscure, hoarse; and Selenium produces encouraging effects in the hoarsness of singers when the hoarseness comes on at the beginniug of singing, in the hoarseness of barristers and preachers, whose voice is fatigued by long use (comp. Ar. triph., Caust., Phos.). There is an awaking in the morning, a fatiguing cough with expectoration of clear mucus, often sanguinolent. It succeeds in follicular laryngitis, and in the beginning of tubercular laryngitis. There is nothing very particular to speak of as regards its other proper effects upon the respiratory apparatus, except that poisonings induced in animals have demonstrated, at the autopsy, patches of congestion and hepatization of the lung.

As regards its action on the nervous system, the predominant symptoms appear to be: exhaustion of the forces, intellectual enfeeblement, an impossibility to be occupied with anything, (that is, total unfitness for all work), principally during heat of the head, with a nervous cephalalgia returning in paroxysms always in the afternoon, and a frequent coincidence

of general incapacity: insufficient erections, extreme weakness after coitus, or absolute coldness. Selenium may be expected to be useful in exhaustion from sexual excess, or loss of semen, in weakness consequent upon acute diseases, in headaches from alcoholic excess.

All the symptoms appear to be aggravated in the morning. It is a particularly efficacious remedy for old people.

It ought to be superior to sulphur in constipation from inertia of the large intestine (comp. Opium and Plumbum). Dose: Lower triturations and high dilutions.

[This drug was introduced by the late Dr. Constantine Hering, after having proved it on himself and others, the results of which were given in vol. 12 of Archiv. f. Hom., but without any information about the provers, doses, and time of appearance of the symptoms. The corrections and additions in MS were received from Dr. Hering by Dr. T. F. Allen for his *Encyclopædia*. After Hering, Schreter proved it with the 3rd and 4th dilutions, the results of which were given in the N. Archiv f. Hom., vol. 3. It was proved also by Dr. Berridge with Jenichen's 1600th! and by another who took Lehrmann's 200th. Neglecting these there is enough in the pathogeneses as obtained by Hering and Schreter to entitle the drug to the attentive consideration of our school. It is a rarely used medicine, but so far as it has been used it has given satisfaction as will have been seen from the résumé given by Dr. Piedvache. The following Clinical Remarks from Jahr's *Symptomen-Codex* will, we trust, prove useful:

"Guided by the symptoms, Dr. Hering gave Selen. in complaints incident to old age, both in males and females, particularly at the critical age, in gastric and nervous headache, chronic affections of the liver, hard stool, urinary difficulties, mucous consumption, ulcers on the legs, and other psoric ailments. It is especially useful in secondary gonorrhœa and weakness of the sexual organs.

"Selen. has generally proved curative when the following symptoms prevailed: violent sticking pain over the left eye, obliging one to lie down, with sensitiveness of the outer head, melancholy and profuse micturition; accumulation of mucus in the mouth and face after sleep; burning during micturition; he can always

squeeze some moisture out of the urethra; secondary gonorrhœa; purulent, milky secondary gonorrhœa became clearer, less, or ceased altogether; reappearance of the menses in the case of a female of 40 years, which had remained suppressed after a severe illness; night cough attending ulcers on the legs; great sensitiveness to a current of air; liability to sweat in walking and during the siesta; flat ulcers on the legs. According to (*t*) Selen. promotes the alvine evacuations of sick persons.—Dr. Neidhard has cured several cases of gonorrhœa with Selen; after the inflammatory symptoms had passed off the discharge remained yellow, thick and copious, particularly in scrofulous subjects predisposed for pulmonary consumption.—According to Dr. Chapman, a twitching at night when falling asleep ceased after taking the first trituration, although it had lasted for years; the relief was, however, only temporary.—Selen. has been successfully employed for a chronic complete obstruction of the nose and in many cases of itching of the nose.—Dr. Paul Wolf has given it with success for great nervous debility after typhus, particularly when the sensations of the patient spread from above downwards."

Selen. has been useful in chronic nasal catarrh with thick, yellow, jelly-like secretion and constant tendency to boring of the nose.

Antidotes: Ignatia and Pulsatilla. Incompatibles: China and wine, which aggravate the pains.

Analogues. Besides those already mentioned, namely, Arsenic and Phosphorus, Opium and Plumbum, Selenium may well be compared with Stannum and Argentum for cough with transparent, mucous expectoration; with Alumina for hard stool; with Lachesis for loquacity and aggravation, especially of the pains, after sleep.—Editor, *Cal. J. Med.*]

REVIEW.

New, Old and Forgotten Remedies. Papers by Many Writers. Collected, Arranged and Edited by E. P. Anshutz. Boericke & Tafel. Philadelphia, 1900.

Whether the Homœopathic Materia Medica, that is, a real Materia Medica Pura, will ever be complete, may *à priori* be considered to be doubtful. The difficulties of building up such a materia medica are insuperable. The experiments upon the healthy with substances, the majority of which must be poisonous or toxic in their action, must necessarily be attended with considerable aversion and even dread. The incentives to the undertaking of provings must be strong. Nothing short of a strong sense of duty, an ardent love of one's fellow creatures, or the stimulus of gain will induce any one to subject himself to these voluntary poisonings. If we leave out the latter incentive as impure and not likely to lead to the desired results, we can easily imagine why so few have been the provers since Hahnemann's time. For a complete and perfect materia medica there ought to be provers in every clime and country, not only for the proving of indigenous but of foreign drugs as well. A drug cannot be said to be thoroughly proved unless it has been proved in all sorts of constitutions. We, here in India, so rich in drugs, know the difficulty, the extreme difficulty in getting provers. And we can, therefore, well sympathize with our confrères in other parts of the world, if they fail to make additions or corrections to the materia medica.

From the point of view of this ideal standard the homœopathic materia medica must for a long time to come continue to be imperfect and incomplete both as regards the number of drugs proved and the thoroughness of their provings, and therefore must necessarily but imperfectly satisfy the demands of an Art which from the nature of its functions can not wait. Hence homœopathy, though theoretically perfect, must, from the imperfection and incompleteness of its apparatus, fall short of the justifiable expectations of the patient-world. Hahnemann felt, as he could not but, the existence of this imperfection of his system, even after he had had provings of no less than a hundred and one drugs, most of which, he himself

admitted, were not as well and thoroughly proved as they should have been. Homœopathy now claims to have a materia medica of over a thousand drugs, as will be seen from a glance at Allen's gigantic *Encyclopædia*, and the periodical literature of our school in which we have some additions almost every day. And still the cry is for more. How are we to account for this insatiable hankering after new drugs, before the old ones have been thoroughly and properly proved?

To a large extent this is due to careless and hasty prescribing and impatience on the part of practitioners which prevent them from selecting the appropriate medicine, and from persevering with a medicine that has been properly selected, and which urge them to repeat and change medicines too often. While we admit this we must also admit, what every honest and conscientious practitioner must have constantly felt, that the craving for new remedies is due no less to the failures that result in spite of the most scrupulous selection of medicine in given cases. The directions which Hahnemann gave, in his *Organon* (§ 161—§ 184), to make up for the incompleteness and deficiencies of the materia medica, are what we cannot but look upon as a sort of tinkering to build up a system. Such practice is not pure homœopathy however necessary and unavoidable it may be, and however superior it may be to the ordinary practice. And the question is, whether under such circumstances, when such round-about homœopathy fails, it is allowable for the practitioner to have recourse to drugs which, though not incorporated in our materia medica, has somehow got the repute of having cured certain diseases or diseased conditions.

The purists of our school would perhaps not allow such a procedure. But we know that Hahnemann did allow the use of even non-homœopathic remedies in urgent cases, such as Camphor in cholera. And we know also that he did recognize the curative power of such a force or influence as *animal magnetism* or *mesmerism*, of which he says that it is "often so stupidly denied," and "either acts homœopathically, by the production of symptoms similar to those of the diseased state to be cured; * * or it is useful by distributing the vital force uniformly throughout the organism, when it is in abnormal excess in one part and deficient in other parts." Thus he recognizes the

curative power of mesmerism even when not acting homœopathically. And therefore we may assume that, when he laid down in general terms, as the very first aphorism of his Organon, that "the physician's high and *only* mission is to restore the sick to health," he would never have denied a patient the chance of recovery or of escape from impending death by the use of a remedial agent that might not have been proved but has been used empirically with undoubted success.

The bold spirits of our school have not allowed themselves to be tied down by the opinion of the purists. Devoted more to the interests of their patients than to the exclusiveness of their system, they do not scruple to go beyond the limits of the latter whenever they think it advantageous to the former. And hence we have such departures as the use of Schüssler's so-called tissue remedies, and of "new, old and forgotten remedies." We therefore hail with pleasure the appearance of the work before us, and congratulate both author and publishers on its excellent execution.

No less than ninety medicines have been treated of in the book, some of which appear to be very useful and are destined to have a permanent place in the materia medica. Whether provings will elicit symptoms or develop diseased conditions for which they have been found eminently useful, can only be determined by subjecting them to such trials, and that they ought to be so subjected there cannot be the least hesitation. These provings, if thoroughly conducted, will have one great scientific value. They will show whether the inverse proposition—that diseases can be cured by those drugs only which can develop their similar in health,—is absolutely true.

The book, as the title-page indicates, consists of "papers by many writers" of all schools, which Dr. Anshutz has collected, arranged and edited. The arrangement has very wisely been made in alphabetical order to afford facility for reference. The editing has been well done, almost all available sources of information regarding the drugs having been availed of. The part borne by him, as he tells us in the preface, "beyond delving for and selecting the remedies, will be found scattered through the book in bracketed small type, and consists in announcing who the writer of the paper was and where it may be found; no attempt

has been made at editing the papers, or commenting on them." In this way he has rescued from oblivion some well-proved and well-nigh forgotten drugs, and brought into prominence a few new valuable but unproved drugs: As an instance of the former we would mention Acidum Lacticum. We quote entire the whole article as a specimen of the manner in which the learned editor has accomplished his task.

ACIDUM LACTICUM.

COMMON NAME, Lactic acid.

ORIGIN.—Lactic acid is obtained from sour milk, resulting from the fermentation of the sugar of milk under the influence of casein.

PREPARATION *for Homœopathic Use.*—One part by weight of pure lactic acid is dissolved in 99 parts by weight of alcohol.

(A very complete proving of this remedy will be found in Allen's *Encyclopædia of Pure Materia Medica,* but little use seems to have been made of it, though the following by Dr. Tybel-Aschersloben, *Allgemeine Hom. Zeitung,* March 13, 1890, seems to show that it is very efficient in certain forms of rheumatism).

We are by no means rich in remedies against arthritic rheumatism, and those which we do use lack the reputation of being reliable. A new and a valuable remedy will therefore be a welcome addition to this list. I say reliable, inasmuch as this remedy is truely homœopathically indicated; for, according to Foster, of Leitz, Niemeyer's Pathology, 10th edition, 2d vol., pp. 561: "*Lactic acid in large doses and used for a long time will produce symptoms entirely analogous to arthritic rheumatism.*" We also find mention elsewhere that the use of lactic acid occasioned rheumatic pains in the thigh.

CLINICAL CASES.

1. A young girl æt. 15 was afflicted with acute arthritic rheumatism, she received *Acid Lacticum* 2 x dil., a dose every 2 or 3 hours, and was so much improved in two weeks that the pain had subsided, and for her remaining weakness *China off.* sufficed.

2. A nine-year-old girl was confined to her bed for three weeks with acute arthritic rheumatism. *Acid Lacticum* 2 speedily cured her.

3. A miner, B., had been afflicted over six weeks with acute arthritic rheumatism. The first dose of *Acid Lactic* 2 gave relief and a second dose cured the man.

4. In a case with swollen and very painful joints one dose of *Acidum Lactic* 2 sufficed to overcome the pain and the swelling. Against the remaining weakness *China* proved efficacious.

5. Arthritic rheumatism of the wrist vanished slowly after using *Acid Lactic* 2 from two to three weeks.

6. A patient afflicted with arthritic rheumatism for four weeks, accompanied by copious perspiration, soon mended under the use of *Acid Lactic* 2 and was entirely cured within two weeks.

7. Even in a case of chronic arthritis with inflation of the Epiphyses of Metacarpal bones and consequent partial displacement of the fingers, *Lactic Acid* 2 produced such a decided amelioration that two months later the report said: all pains are gone even the anchylosis has disappeared.

(It has also been successfully employed in cases where the digestive powers are weak, and it is said to be preferable to other acids in such cases. It has also been successfully employed in cases of dyspepsia.)

As an instance of bringing into prominence some valuable new, though as yet unproved remedies, we would mention Cratægus Oxycantha which has proved so useful and in some instances life-saving in diseases of the heart, both functional and organic. The following history is given from Dr. Jenning's communication on the drug to the *New York Medical Journal*, Oct 10, 1896: "Dr. Green of Ennis, Ireland, for many years had a reputation for the cure of heart disease that caused patients to flock to him from all parts of the United Kingdom. He cured the most of them and amassed considerable wealth by means of his secret, for, contrary to the code, he, though a physician in good standing, refused to reveal the remedy to his professional brethren. After his death, about two years ago, his daughter, a Mrs. Graham, revealed the name of the remedy her father had used so successfully. It is *Cratægus Oxycantha.*" Then cases are given from Dr. Jennings and Dr. Joseph Clements, both of the old school, and from our own Dr. T. C. Duncan, from which one can easily see how valuable the drug has already proved from its empirical use, and how invaluable it would become when its whole physiological action is developed by provings after the method of Hahnemann. Dr. Duncan seems to have made an imperfect proving, and he says: "In my proving of this drug it produced a flurried feeling due, I thought, to the rapid action of the stimulated heart. One prover, a nervous lady medical student, gives to-day in her report 'a feeling of quiet and calmness, mentally.' This is a secondary effect, for it was preceded by 'an unusual rush of blood to the head with a *confused* feeling.'"

We have said, *almost* all available sources of information have been drawn upon, because we find that some sources have been left out which might have been utilized. Thus in the first article Acalypha Indica we are surprized to find that no notice has been taken of the provings by two gentlemen of Calcutta, which were published in the *Calcutta Journal of Medicine* for Nov., Dec. 1895, and Sept. & Oct. 1896, and in the Transactions of the International Homœopathic Congress of 1896. This omission is the more remarkable as two copies of the Journal

are sent to Dr. Anshutz direct as editor of the *Homœopathic Recorder* and of the *Homœopathic Envoy*. If he had cared to look at the provings, and at the remarks by which the editor prefaced the Schematic form of the pathogenetic symptoms, he could have rendered his article on the drug more satisfactory, because fuller and up to date. He would have seen that besides its hæmorrhagic action (which was not developed in any of *our* provers), it has other and no less important actions on the alimentary canal, on the commencement of the respiratory apparatus, on the fifth nerve, and on the skin.

We will cite another instance in which a most respectable source of information has been left out. Under Lolium Temulentum we had expected to find what Hahnemann had said on drug, but we do not. We give his remarks entire to show how valuable they are: "The *darnel (lolium temulentum)* is such a powerful plant, that he who knows its pathogenetic action must congratulate the age when, for the benefit of humanity, its application shall be known. The chief phenomena of the direct action of the seeds are cramps apparently of a tonic character (a kind of immobility), with relaxation of the fibre and suspension of the vital spirits, great anxiety, exhaustion, coldness, contraction of the stomach, dyspnœa, difficult deglutition, rigidity of the tongue, pressive headache and vertigo (both continue longer than is known from any other drug, in the greatest degree, for several days), noises in the ears, sleeplessness, insensibility, or weakness of the external senses, red face, staring eyes, sparks before the eyes. In the transition to the secondary action, the cramps become clonic, there occur stammering, trembling, vomiting, diuresis, and (cold) perspiration (cutaneous eruption, ulcers on the skin ?) yawning (another kind of cramp), weak sight, long sleep. In practice, cases of obstinate vertigo and cephalalgia present themselves, which we are inclined to avoid treating, from their incurability. The darnel appears to be made expressly for the worst of such, cases probably also for imbecility, the opprobrium of medicine. In deafness and amaurosis something may be hoped from its use."

We do not point out these omissions in any spirit of captious criticism, but in the hope that they may be supplied in a new edition which we are sure will soon be called for. Dr. Anshutz himself has said in the preface: "That this collection of papers has many gems is, I believe, not to be questioned; that some better papers on the remedies than those herein presented may exist is also probable, that it may contain some that are of doubtful value is not to be denied, and even some that have no right in such a book may have crept in." The reader should be grateful for the gems and need not mind the counterfeits and omissions.

EDITOR'S NOTE'S.

Suicide Amongst Pharmacists.

According to statistics recently published by a German contemporary, it would appear that pharmacists, though the means of suicide lie always temptingly within reach of their hands, show somewhat less disposition than the average of mankind to adopt that bad plan of opposing the sea of troubles which is life. During a period of fourteen years the mortality among them from this cause has been 2.05 per 10,000 as against 2.1 in the population at large. Pharmacists, as might be expected, as a rule make their quietus not with a bare bodkin, but with the contents of a poison bottle. According to the statistics quoted the proportion who have chosen this mode of death during the period referred to has been 56.7 per cent. In 1898 it was as high as 80 per cent., but in 1899 the proportion fell to 50 per cent., a good third of the whole number having for some reason preferred the bullet to the bowl.—*Brit Med. Journ.*, April 28, 1900.

Ossification of the Uterus.

Miller, of New Orleans (*New York Med. Journ.*, March 3rd, 1900), states that a girl of 16, robust and well developed, was placed under the care of Dr. Ernest S. Lewis, of New Orleans, for amenorrhœa. The vulva was fairly developed, but on further examination it was found that the vagina was entirely absent. Through the rectum a peculiar mass, somewhat larger than the normal uterus, and very hard at some points, was detected. There was no evidence of retained menstrual fluid, though the molimen was well marked. The abdominal cavity was opened; occupying the site of the uterus and appendages was an anomalous mass, considerably larger than the normal structures, and attached by broad-ligament support only on one side; removal was accomplished without great difficulty by tying off in mass the short fold of broad ligament tissue which secured it. Recovery was rapid. The mass weighed under 6 ounces, and was pear-shaped. It was in part soft, and this portion seemed to include rudimentary tubal and ovarian tissue. The body of the uterus was hard, like bone; the cervix, intensely tough, seemed to lose itself in the hard mass, which was found to be composed throughout of compact bone structure, presenting all the histological elements and arrangement of normal bone.—*Brit. Med. Journ.*, April 21, 1900.

Poisonous Mother's Milk.

Saunders and Fisch (*St. Louis Med. Rev.*, December, 1899) have made an experimental examination in 5 cases of the milk of mothers which was producing grave constitutional disorder in their infants. In 1 case an albumose was found that produced convulsions in guinea-pigs with a fall of temperature when injected subcutaneously. In a second an alkaloid was isolated (which was neither creatin nor creatinin, but probably belonged to their group) that produced convulsions with a rise of temperature in guinea-pigs, and caused death in a white rat. In this case and the two following the toxic symp-

toms in the children appeared on the re-establishment of the catamenia in the mother. In a third case an alkaloid was separated which produced convulsions and death in white rats, and also killed guinea-pigs. In a fourth case the milk gave negative results. In a fifth case the milk was at first harmless to guinea-pigs, and no toxic body could be isolated; but after some nervous disturbance sustained by the mother the child become more seriously ill, and then the subcutaneous injection of the milk in a guinea-pig produced convulsions, coma, and lowering of temperature. The authors believe that the changes in the milk were due to the nervous disturbance of menstruation. They point out that in selecting a cow for the supply of an infant's food, one that is pregnant should be chosen, for obvious reasons.—*Brit. Med. Journ.*, April 21, 1900.

A Surgical Blessing in Disguise.

Cases are on record in which assault and battery committed on the human frame has had a curative effect probably not intended by the perpetrator. In one of these a garotter, who relieved a distinguished physician of his watch, is said to have relieved him at the same time of a goître by the pressure applied to the throat *secundum artem*. We have also heard of a post-pharyngeal abscess being ruptured by throttling, with the result that the patient was cured. So far as we know, however, there is no instance, modern or ancient, in which a stab in the belly has proved to be a surgical blessing in disguise. Such, however, if we are to believe the *Philadelphia Medical Journal*, was the result of a wound recently inflicted in a free fight in Williamsburg. One of the combatants suffered from appendicitis, but had never been able to screw his courage to the sticking point of operation. In the fray someone considerately stabbed him in the abdomen, and when taken to the hospital the surgeon found the way to the peccant part opened for him by the assailant's knife, and removed the offending appendix with the greatest ease. The stab must have come at an opportune moment, for the man is said to have been in a bad way, and an operation was urgently needed. He is reported to be doing well, and it is to be hoped feels grateful to the involuntary benefactor who performed the preliminary part of the operation.—*Brit. Med. Journ.*, April 28, 1900.

Fœtography.

Bouchacourt (*L'Obstétrique*, v, p. 137, March, 1900) under the name of intra-uterine fœtography discusses the various attempts that have been made to obtain a good skiagraph of the fœtus *in utero*, both in the case of the cadaver and of the living woman. So far the results have been very unsatisfactory, a circumstance to be accounted for, according to Bouchacourt, in several ways. He has experimentally demonstrated that the liquor amnii to some extent prevents the passage of the rays; so do the living uterine wall and placenta. Further, most of the mothers made deep and sudden respiratory movements (due to fright at the novel procedure apparently), and these interfered with the making of a good skiagraph. The active fœtal

movements, stimulated by the Roentgen rays, also had a bad effect; so had the dark shadow thrown by the pelvi-vertebral skeleton of the mother. Finally there was the technical difficulty of getting the sensitive plate brought equally near to the different parts of the gravid uterus. So far it had only been found possible to obtain, by means of skiagraphy, the knowledge of the presence of a fœtal head in the pelvic cavity or of part of the fœtal skeleton in the abdomen in lean subjects, things which ordinary palpation would equally well elicit. The author makes some suggestions for modifying the apparatus with a view to overcoming some of these difficulties.—*Brit. Med. Journ.*, May 5, 1900.

Mark Akenside.

It is pleasant to be reminded of the children of genius in our profession. It was of Mark Akenside and of his modest medical reputation in London—"the proper place for a man of accomplishments like his"—that Dr. Johnson wrote his well-known lines: "A physician in a great city seems to be the mere plaything of fortune; his degree of reputation is for the most part totally casual; they that employ him know not his excellence, they that reject him know not his deficience." The *Newcastle Weekly Chronicle* of May 5th contains the report of an interesting paper on Akenside read by Mr. John Wergе before the Hampstead Historical Society, illustrated with pictures of Akenside's Newcastle home, as well as of the house at Hampstead of his faithful and valued friend, Jeremiah Dyson, better known to the present generation in its reconstructed form as the house of the late Sir Spencer Wells. Here Akenside lived for a time; and to this house he repaired in later years for refreshment and convalescence.

> "Thy verdant scenes, O Goulder's Hill,
> Once more I seek; a languid guest,
> With throbbing temples and with burden'd breast,
> Once more I climb the steep aerial way."

It is pleasant to know that these "verdant scenes," which for all time are secured as a refreshment for weary Londoners, will for an equal period be associated with the names and with the genius of men of our own profession.—*Lancet*, May 12, 1900.

Electrical Burns and their Treatment.

Elder (*Montreal Med. Journ.* January, 1900) has observed that electrical burns from contact with a "live wire" differ greatly in their behaviour from ordinary burns. At first the clinical picture is very much that of moist gangrene or that of severe frostbites. The pain is often very severe. The shock present is due both to the electrical contact and to the burn *per se*, being more severe the more extensive the burn and the more prolonged the sloughing. They require one and a half to three times as long for recovery as ordinary burns. The sloughing affects principally the muscles and blood vessels, and the blood does not appear to show any tendency to clot in these burns. The treatment he has found most efficacious is to keep the limb in a warm carbolic lotion bath of 1 in 100 strength, taking precautions

against the possibility of the occurrence of secondary hæmorrhage. If secondary hæmorrhage occur, or when a definite line of demarcation has formed the necrosed tissue must be removed. In many cases an amputation is necessary, but the skin flaps should not be closed, because large masses of muscles are sure to slough away subsequently even, it may be, right up to their point of origin. The wound should be allowed to granulate, and subsequently be skin grafted. Immediately after the burn hypodermic injections of morphine (1-6th gr.) and strychnine (1-30th gr.) may be given alternately. To lessen the offensive odour the 1 in 100 carbolic lotion was in his cases replaced by a bath of 1 in 1,000 formalin, but this caused so much pain that 1 in 10,000 perchloride of mercury solution was substituted. In one case whisky was given, and to relieve the severe pain, in addition to the morphine, phenacetin, caffeine, chloral hydrate, and potassium bromide were administered together. The author asks why the burn should take place only at the points of entrance and exit of the electrical current, the intervening tissues apparently escaping; why a current of, say, 600 volts should in some cases prove fatal, and in others a current many times that strength should merely inflict severe burns; and why in some of the fatal cases there should be no indication of burning whatever and in other non-fatal cases the burning should be most extensive.—*Brit. Med. Journ.*, May 12, 1900.

Albuminuria and Diabetes.

Ferruccio Schupfer has investigated the causes and significance of albuminuria in diabetes (*Il Policlinico*, February, 1900). The conclusions which he draws are that albuminuria may be due to the excessive function of the kidneys, diabetic coma, cystitis, or pyelitis, the consumption of egg albumen; in some cases it seems to be due to nervous influences, in others to the presence of some microbic toxin, to hyperæmia and passive congestion; lastly, to parenchymatous nephritis. In cases of experimental pancreatic diabetes, a slight albuminuria may be present and does not seem to affect the percentage of sugar; but should the watery elimination be reduced the total quantity of sugar diminishes, and in cases where there is a large quantity of albumen there is a considerable reduction in the passage of sugar into the urine. In cases of experimental nephritis in dogs, more sugar is secreted by the kidney which eliminates the least amount of albumen. In cases of combined nephritis and diabetes experimentally produced the excretion of urea corresponds to that of the sugar. In pancreatic diabetes occurring in the human subject, albuminuria which does not surpass 1 per mille does not seem to have any influence on the sugar elimination. The writer is still uncertain as regards the effects of large quantities of albumen, but so far his observations go to show a similar condition to cases experimentally produced as above. Glycosuria in arterio-sclerotic diabetes is slight, and does not appear to be much influenced by renal lesions which are apt to occur in such cases. In gouty diabetes, glycosuria and albuminuria may increase or diminish *pari passu*; they may even alternate, or one may increase in correspondence to the diminution of

the other, but it seems to depend on the state of the kidney and the diet. There may be considerable albuminuria with a high degree of glycosuria. Both seem to depend on the gouty condition. The writer also finds that when a gouty glycosuria does not disappear with a non-hydrocarbonous diet, it generally means that there is very considerable renal disease and albuminuria. It may also be said that grave renal changes occurring in a diabetic patient are evidence of a gouty origin. In pancreatic diabetes the existence of some albuminuria does not call for further change in the diet, but, on the other hand, in the diabetes of arterial sclerosis and gout, albuminuria indicates a diet and treatment directed to the vascular and gouty condition, avoiding all articles of food which are liable to augment the renal lesion.—*Brit. Med. Journ.*, April 21, 1900.

Treatment of Phthisis at High Altitudes.

Murat (of the Sanatorium at Aubrac) discusses some of the so-called contra-indications in the treatment of phthisis at high altitudes (*Arch. Gén. de Méd.*, February, 1900). Advanced cachexy is usually stated to be a contra-indication. The writer considers that this is by no means the case, and he gives instances of patients arriving at the sanatorium in very advanced conditions of weakness, loss of appetite, anæmia, etc., and who did extremely well. It is at all times important to ascertain the relation of the disease as regards heredity, duration, etc., to the degree of cachexia as in some patients the cachetic condition appears early and seems to be out of proportion to the phthisis. It would appear that such cases do not promise much amelioration. In others, again, it seems to be due to excessive pulmonary suppuration. The effect of the climate of Aubrac is to reduce pus formation and in such cases the writer reports a marvellous improvement. Under these same circumstances pyrexia cannot be considered a contra-indication, and it will probably disappear with the improved state of secretion. It is only in cases of profound cachexia, laryngeal and intestinal complication, that little result may be expected. The writer speaks highly of the treatment at Aubrac in the cases of incipient phthisis and the benefits derived by those showing a marked predisposition to the disease. Even the existence of extensive invasion is not considered a contra-indication by Murat, who records in the same article several instances where large cavities dried up with disappearance of adventitious signs and the patient was able to walk long distances without fatigue. Hæmoptysis, instead of being a contra-indication, is looked upon by the writer rather as an indication, and among the patients hæmoptysis is uncommon, though it may previously have been considerable. Laryngeal phthisis does not seem to do well at Aubrac, the air appearing to be rather too keen, and Murat does not recommend their being sent here. As regards emphysema, the question depends on circumstances. In many instances respiration becomes more difficult. Much depends upon the extent of the tuberculous lesions in these cases and to the coexistence of cardiac embarrassment. Cases of "florid phthisis" do not on the whole benefit much from high altitudes in the writer's

opinion. There may be a slight amount of amelioration, but on the whole they make little or no progress. The acute forms of phthisis seem to do badly. Renal complication, tuberculous arthritis and rheumatism are contra-indicative and are likely to do badly.—*Brit. Med. Journ.*, April 28, 1900.

Coffee Intoxication.

Combemale (*Echo Méd. du Nord*, March 11th, 1900) records the case of a man who was admitted under his care on account of giddiness, which came on suddenly in the street. The case was taken by the police for one of intoxication. On admission he was noticed to be extremely thin, and he suffered from vague pains in the limbs and loins, intense headache, generally worse at night, and most marked in the temporal regions, which he described as a heavy cap pressing on his head. It prevented his sleeping more than two hours or so in a night. He dreamed considerably, and stated that he always saw grotesque animals passing before him. Pressure over the calves elicited considerable pain of a muscular character. The reflexes appeared to be normal, and there was no alteration of sensibility. There was no tremor; the gait did not present any marked characters other than a slight heaviness. There was no Romberg's sign. The lungs showed slight degree of emphysema. There were no valvular lesions of the heart nor alteration of rhythm. The man was by trade a rag gatherer. This description corresponds with that given some years ago by Guelliot—namely, emaciation, paleness of the face, some tremor of the lips, muscular pains, and vertigo as occurring in cases of chronic caffeism. In this case the patient was in the habit of going from house to house where the contents of the coffee pot were reserved for him, which he was in the habit of consuming in large quantities. The literature on this subject is not extensive; in fact, the condition has not been widely recognised; but Combemale was able to quote references to the condition, especially those of Viaud (*Tribune Médicale*, 1897). He finds that intense vertigo, which may be mistaken for Mèniére's disease, and very marked bradycardia, are characteristic of chronic caffeism. There is also ringing in the ears, a sensation of falling, and other evidences of alteration in the central nervous system. Mendel is also quoted by the writer as noticing general weakness, distaste for work, mental depression, insomnia, tremor, palpitation, coldness of the extremities, symptoms of dyspepsia, obstinate constipation, as present in this condition. The prognosis seems to be good, as, on avoiding the use of coffee, these various manifestations of intoxication rapidly disappear, though recurrence is common.—*Brit. Med. Journ.*, May 5, 1900.

The Internal Secretion of the Kidney.

An article on this subject founded on experiment by MM. Chatin and Guinard of the University of Lyons appears in the *Archives de Médecine Expérimentale* for March, and is on the whole unfavourable to the employment of renal juice as a therapeutic agent. The investigations made by Dr. Brown-Séquard in 1889 on the juice of the testes

led him to suggest both on clinical and experimental grounds that the kidneys might possess special attributes and that uræmia might have more complex causes than mere auto-intoxication due to the non-elimination of excretory products. Later authors have adduced similar arguments to those advanced by Dr. Brown-Séquard, and have used others drawn from therapeutics. The clinical argument is that absolute anuria may exist for several days without uræmic phenomena appearing, although auto-intoxication ought to occur within three days, and observations to this effect have been made by Mercklen, Féréol, and Fowler. Féréol's case is typical; his patient had complete suppression of urine for eight days from calculi, and yet recovered without having had any symptoms of uræmia or any accessory symptoms such as vomiting or sweating. The only symptoms noted were that the pulse and the temperature in the rectum were both slightly lowered. In Fowler's cases, amongst 93 patients who suffered from anuria only 19 presented symptoms of uræmia. From these facts Dr. Brown-Séquard drew the conclusion that the kidneys form an internal secretion, the suppression of which produces those serious toxic symptoms which play so large a part in uræmia. Uræmia he believed to be not the result of the suppression of the renal excretion alone, but of the suppression of both the secretions of the organ, the internal as well as the external. The arguments, founded on physiological experiments, were also based on the experiments of Dr. Brown-Séquard and also on those of Meyer. The results of the experiments of both of these observers were that animals previously nephrectomised lived longer when kidney juice was injected into them than when they were not so injected. An improvement in the method of experimentation was made by Vitzou, who, instead of injecting kidney juice, used the defibrinated blood of a healthy animal. Vitzou found that nephrectomised rabbits which were not subjected to treatment lived from 16 to 32 or rarely 34 hours after the operation, whilst those that were treated lived 66 hours. Dogs that had both kidneys removed died in from 24 to 40 hours, but when injected with renal venous blood they lived for four days and 13 hours as a maximum period. MM. Chatin and Guinard quote the conclusions of several other observers to which their own are opposed. They then give the details of their own experiments. The kidneys were removed with every antiseptic precaution in three dogs and the serum from the blood of the renal vein of a goat was immediately injected into two of the dogs and repeated after eight hours and again on several occasions. The non-injected dogs lived 63 hours, the other two lived 41 and 53 hours. Four other experiments were made with uniform and concordant results. In all cases the dogs into which the serum of the renal venous blood was injected died sooner than those in which no treatment was adopted. These observers consider, therefore, that the question of the existence of an internal secretion of the urine cannot as yet be satisfactorily answered and that no hasty generalisation should be made.—*Lancet*, May 5, 1900.

The Diseases of South Africa.

Dr. Kolle, who has just returned from South Africa where he has been studying bovine plague, has given the Medical Society of Berlin the benefit of his views as to the diseases of that part of the world. In beginning his address he volunteered the opinion that the war, which he regards as a racial struggle, will end in the victory of the Boers. It may be surmised that on this point the wish was father to the thought, for Dr. Kolle went on to point out that when Great Britain ceases to be predominant in South Africa that region will form a convenient "dumping ground" for the large number of superfluous practitioners of medicine who are turned out every year from the universities of the Fatherland. Dr. Kolle stated that the Boer nation numbers some 800,000 souls, and is spread over the whole of South Africa, whilst the British are found only near the sea coast, and in certain commercial centres. There are six times as many negroes as whites. The climate presents every intermediate degree between temperate and tropical, and is one of the healthiest in the world. There is, however, a great scarcity of good water. Nearly everywhere surface water is used, which the domestic filters fail to make wholesome. Consequently typhoid fever is frequent, and is so fatal that the mortality which it causes is regarded by some as the result of a mixed infection of typhoid and malaria. Next in the order of prevalence comes dysentery. Malaria is frequent, and occurs in the tertian and tropical types. Dr. Kolle points out that although mosquitos are found all over South Africa there are many places where there is no malaria; he admits, however, that the mosquitos may not be all of the same species throughout the country. Plague, yellow fever, and cholera have on several occasions made casual appearances in South Africa, but have not struck root. Dr. Kolle attributes the fact that the plague did not spread last summer from Delagoa Bay to the absence of indigenous rats, and to the care which was taken to prevent suspected ships from discharging their cargoes, and thus introducing imported colonies of these rodents. Scurvy is met with in a serious form among the negroes; Europeans also suffer from it when they are exposed to privations. Pellagra is almost unknown. Syphillis rages as a veritable scourge among the negroes, showing itself in the most acute forms so as often to be unrecognisable till the results of specific treatment show the nature of the disease. Tuberculosis is almost unknown among the Boers. Leprosy, however, obtained a footing among them at the beginning of the century, and the sufferers from that disease are now estimated at from 8,000 to 10,000. Dr. Kolle explains their freedom from tuberculosis by their open-air mode of life. Pneumonia assumes so formidable a type in negroes that it has been thought to be a distinct disease; the etiological factors, however, are the same as in Europe, and the gravity of the disease arises from alcoholism, which is universal among the natives. Dr. Kolle goes so far as to say that alcohol is the chief factor in the mortality of the negro population. Another cause of the progressive disappearance of the negro race is

the great infant mortality, which is largely due to artificial feeding. The Boers' children, on the other hand, are nursed by their mothers, and the infant mortality among them is very low. The Boers are very prolific, families of twelve children being by no means rare, and patriarchal figures, such as twenty-four and upwards, are not seldom reached. On the whole, the ravages of epidemic disease in South Africa are slight in the human race, but it is far otherwise in regard to domestic animals. From this point of view South Africa offers an immense field for the study of infectious diseases.—*Brit. Med. Journ.*, April 28, 1900.

The Plague in Australia.

Letters received from Sydney state that four cases of plague remained under treatment at the end of the week ended March 16th. During the week ended March 17th the figures were 12 cases admitted and three deceased, leaving 13 remaining under treatment. Up to March 17th the total cases were 22, with eight deaths. Of the fatal cases three were discovered only just before or after death, but were reckoned as admissions for convenience. The total "contacts" isolated were 117 in number; there were five cases of plague among the "contacts." These cases occurred in two families. In one family the second case occurred the day after admission. In the other family two attacks occurred on the day of admission, one on the third, and one on the fifth day after admission. With the exception of the cases mentioned in the Lancet of April 14th all the attacks (17 households) occurred among persons living in the infected area or working in it and quite unacquainted with each other. One case only of the septicæmic form was met with: it occurred in a girl, aged 14 years, and ended within 48 hours. One cervical bubo and two axillar buboes were observed, all others having been femoral or inguinal. The majority of the patients under treatment seemed likely to recover. Vomiting and more or less epigastric pain were common signs of attack; interference with speech was definitely present in but two or three cases; the same might be said of anxiety, though a pinched expression and pallor about the root of the nose were more often noticed; the bubo was excruciatingly tender in a few cases only. Municipal efforts in the immediate neighbourhood of the infected area are now more energetic and more practical. Steamers engaged in the coastal trade are probably free from rats now owing to the efforts made by companies under direction of the Department of Public Health; a disinfecting and fumigating staff has been organised under which this work will be carried on more thoroughly and more systematically, and to be set in motion only awaits the issue of a proclamation requiring all vessels trading between Sydney and other ports in New South Wales to produce a certificate of such treatment before being allowed to communicate with the shore. Nothing short of practical stoppage of trade can prevent carriage of rats from the shore to the ship in various kinds of cargo; however, a measure of protection will be thus furnished which, supplemented by the strenuous efforts now being made to destroy the wharf rats, may be effectual.

Inoculation of all persons living on, or working in, the infected area was systematically pressed, an ample supply of prophylactic for present needs being at hand. Five medical men were housed in a separate establishment for plague duty. In some quarters there was a demand for "plague experts," but for practical clinical purposes this kind of help was not needed, while as to management it seemed likely that a stranger might find himself even more embarassed by political conditions of general and local government—which can hardly be distinguished from each other—than was the central health authority itself. The authorities in New Caledonia alleged that their infection came from jute-bags imported from India and distributed at Sydney, a point which, however, was doubtful. More recent information as to the plague in Australia is given by Reuter's telegrams in the *Times* of April 23rd which show that up to that date 129 cases of plague with 46 deaths have occurred in Sydney.—*Lancet*, April 28, 1900.

CLINICAL RECORD.

Indian.

CASES OF SCROFULOUS AND ENLARGED GLANDS BY PAINLESS ELECTROLYTIC CAUSTIC.

By Dr. Bepin Kristo Kumar, L.M.S.

Case 1. In May 1877 I had occasion to treat a case of sinus in the left axilla of a middle aged Mahomedan.

He had an abscess in the left axilla which burst of itself about 4 months ago, and since then, instead of healing up, there was a continual weeping of a thin ichorous discharge up to this time. There were enlarged glands at the bottom of the sinus, but two of them were about the size of an ordinary betel-nut; the probe could be passed about an inch and a half into them.

The ordinary method of treatment both internal and external was adopted for a few days, when an article in the Lancet drew my attention to the successful treatment by the above method.

I began to try this method in this case (though modified to a slight extent). I introduced a thin piece of zinc into the sinus as far as it could be admitted and put a copper piece outside in connection with it, and covered the surface with a bit of lint soaked in a weak solution of chloride of sodium to help the action. After a couple of days the discharge was found healthy looking, and small bits of slough were seen, coming out with the zinc piece, which I used to remove, clean and replace every day. The thin discharge disappeared and after a week the glands were so much reduced as to escape detection unless minutely searched for. After 12 days' application, the glands entirely disappeared and the discharge was healthy looking, and at that stage the ordinary healing ointment was applied which completed the cure without any interruption in a week.

The gratifying result obtained by the adoption of this method, led

me to try it with equally successful result, in several other cases which had previously resisted all the ordinary methods, except extirpation of the glands.

Case 2. B. Mitter, a young man of 23 years of age, suffered for two years and a half with sinuses and glandular swellings on both sides of the neck at the upper parts close to the angles of the lower jaw. He was apparently in good health with no visceral complications, but the sinuses resisted the various sorts of treatment adopted before. He was operated on several times, i.e., the sinuses were laid open and suppurating glands lanced, but no thorough excision of the glands was ever performed. He was placed under this method of treatment, (when the glands were swollen and the discharge was thin watery gelatinous-looking). On the 3rd day the discharge was found healthy looking and in a fortnight the glands disappeared and the sinuses were seen healing up kindly and afterwards a little healing ointment completed the cure in a week. The patient is still alive, hale and hearty, without any such troubles during this long period.

Case 3. B. Ganguli, a young boy of 18 years, was brought to Calcutta in Aug. 1883 for the treatment of a sinus, situated on his left thigh at its upper third, almost on the mesial line, and an enlarged gland about the size of a good sized betel nut, could be felt about an inch above the opening and the probe could be passed upto the gland. The discharge was thin and watery. His elder brother being a medical man (Bachelor of Medicine) tried all sorts of things and finding no relief, sent him to Calcutta for treatment. He consulted several doctors of the metropolis some of whom are the leading men of our profession, who were of opinion that nothing short of operation (extirpation of the gland) could bring on a cure at least within a short time. The father of the patient at last sent for me to have my opinion and I agreed to the opinion of the other gentlemen, but at the same time suggested to try this method of treatment, before undergoing the operation of extirpation and he yielded to my request.

I adopted the same treatment and to my surprise and pleasure, found the gland began to diminish in size from the third day of the application and the discharge become healthy looking, and in a fortnight the gland disappeared entirely and the sinus was in a healthy condition and then some soothing ointment was applied and he was all right in a week.

Case 4. J. Dutt, a young boy of 16 years suffered from a sinus at his right axilla following the bursting of an abscess, for a month and a half.

The boy was tolerably healthy looking, with no other complications. There were enlarged glands at the lower part of the sinus, and the discharge was unhealthy. He was placed under the treatment of a qualified medical man for about a month, who adopted the usual methods without any relief. The guardians finding no benefit placed him under another senior gentleman (better known as a surgeon), who after applying the ordinary methods could not improve the condition of the sinus, and asked the guardians to have a consultation, and recommended the removal of the gland under chloroform as without it there would be no cure for the boy, all sorts of treatment having been tried in vain.

Naturally the guardians were very anxious and tried to avoid the operation under chloroform if possible and consulted me for my opinion. I suggested this treatment to be tried, before the operation which would be the last resource. The guardians yielded, and I adopted the same treatment and to my satisfaction, the boy was cured in 3 weeks, without any interruption. The patient is still alive and is in robust health.

Case 5. In March 1897, a middle aged healthy looking woman placed herself under my treatment for a large tumour, situated at the upper part of the neck, encroaching the space just behind the angle of the lower jaw on the right side.

The tumour was deep seated, moveable to a slight extent and the skin was not adherent. It was about the size of a small orange, rather elongated and which had been slowly growing for the last six months. She had taken admission in one of the hospitals, where she was detained for a few days and then advised to leave the hospital as the removal of it under chloroform would be hazardous. She used to feel giddy from time to time before coming to me, and actually had fallen down one day in a fainting fit.

Just below the tumour there was a small suppuration spot, which being opened, a small quantity of pus escaped, without any relief to the patient and without any actual diminution in the size of the tumour.

Through this opening I introduced the zinc plate and kept it in contact with the hard mass of the tumour and a copper piece was placed outside in contact with the zinc plate and covered it with a piece of lint soaked in a weak solution of chloride of sodium.

The next day a small bit of slough came out of the tumour on being pressed, the dressing was changed every day with a gradual diminution of the size of the tumour; and without any interruption

the tumour disappeared entirely in a month and the wound healed up in another week's time.

Remarks.

It is well known to the profession how obstinately these glandular swellings with or without sinuses resist treatment and even baffle the attempts of skilful surgeons. The question always arises whether it is not advisable to extirpate the diseased glands at once before seeking other remedies.

Owing to the recent and rapid progress in operative surgery, surgeons are generally inclined to use the knife more freely than before as the success seems to be more attractive and consequently experiments with medicine and other measures have been more or less abandoned. Whatever the success may be, there is more or less risk in every operation however trivial even in these advanced days of surgery; and so operative measures should be avoided as much as possible, and should be considered the last resource, as there are reasonable objections which should be attended to, viz:

(a). Difficulty of removing *all* the diseased glands.

(b). The unsightly look of the scars left behind.

(c). Repeated operations even have proved unsuccessful.

(d). Outbreak of general tuberculosis occurred in a case of mine, when repeated operations were performed by the ablest men but unsuccessfully, and cases are on record of such recurrence.

Foreign.

CASES OF EPILEPSY.

By W. B. Carpenter, M.D, Columbus, Ohio.

Case I.—E. M., æt. 23, a pale, slender youth with a neurotic heritage. In early childhood subject to spasms, especially when teething. Had a long siege of milk-crust, suffered from various treatments, and was finally "cured" (?) by application of tar-water and vaseline. "This was by a homœopathic physician," and the family has clung quite closely to homœopathy ever since. No other sickness or injury known. First epileptic attack was in March 1890, when doing errands for the house. It came with extreme nausea and vomiting, bewildered sensation and vertigo. He felt lost and could not recognize his surroundings. It passed off when the stomach was thoroughly emptied, leaving a tired, weak feeling. The second attack came on during school hours, when a sudden hot flash and onset of nausea were followed by confusion of thought, unconsciousness, and falling to the floor. After ten or fifteen minutes all was

over but the weakness. At infrequent and irregular intervals similar attacks were repeated, a little increase in violence being noted, with biting of the tongue. In every instance nausea and confusion of ideas were the first sensations perceived. He was under my care a short time soon after these attacks appeared, during which time surgical relief was invoked to remedy itching piles and prolapsus of the rectum, with a consequent chronic diarrhœa. Those troubles seemed to abate, but the convulsive seizures still kept on. Then the patient went to a distant city, where the treatment was mainly directed to correcting the errors of digestion by lactopeptine and kindred digestive agents. After his return to his former home, haste to overcome the attacks led to the trial of many physicians and many so-called curative agents, the chief ingredient in every prescription being bromide of potash. At this time he was sent to the State Hospital at Gallipolis, where full doses were given of a solution of ergot, chloral hydrate, and bicarbonate of soda, with the Brown-Sequard elixir, which, as you know, contains three bromides. For severe insomnia paraldehyde was used intercurrently, and Fowler's solution was used for a tonic and to correct numerous skin symptoms. A condition followed the ergot prescription that was diagnosed as eczema—it was universal, and of such intensity as to be deemed worthy of special reports in medical journals. This seemed finally to yield to a two to four per cent. solution of kali permanganate.

Glandular enlargements, otorrhœa and soft spots on the skin similar to warts had existed for a long time, and were simply called "constitutional," and were never attributed to the medication. Increasing mental dulness was also noted. Constant fear of other attacks (which really did return often) and of being a confirmed epileptic; aversion to mental effort and all society; physical weakness; pronounced indigestion, in which all the abdominal organs were affected, with the symptoms before recited, formed the "status presens" when I took hold of the case nine months ago. You may easily foretell that the treatment was to remedy the hygienic conditions by proper attention to diet, rest and sleep, recreation, clothing, baths, bowel movements, and the use of nux vomica, 6x to 500x.

Now the result. No attack for months; marked improvement in mental and physical condition in every particular, so much so that he feels well in every way and gives hope, at least, of maintaining the point already reached.

Case II.—F. M., æt. 29, with no untoward family tendencies. Mechanic. Had meningitis at three years of age. No other special

disease since that except some unusual trouble following vaccination. In 1894 he was dealt a severe, accidental blow with a sledge hammer, the stroke being near the lower part of the frontal bone immediately over the nose. His first convulsive attack was in 1896 (October). It came on at night during sleep, and was only noticed by his wife :— it seemed to be a shuddering or stiffening of the body, with turning of the head, gritting of the teeth and groaning. In the morning the patient noticed a heavy, dull feeling in the head, and a sensation as though the whole dody was weighted down. He has regular employment at light work. The attacks came often, but always at night, and were only known to the patient in the morning by the feelings just stated. They increased in severity, and after a couple of years began to come by day ; but in all his experience, the attack has only come three or four times when he was away from home. When he was awake the aura would come in sufficient time for him to get to a safe place. This aura was a ringing sound as of distant bells, then a buzzing as of bees, increasing in force till he fell unconscious, which condition would last from ten to sixty minutes. One strange symptom existed for months, *i.e.*, on looking slightly upward, it would seem as though a filmy shower of black rods and rings would come from above, and disappear when they reached the level of the eyes. Attacks came on from one to four weeks apart. He then took bromides, with the effect of securing a cessation of seizures for seven months ; but they then returned in spite of continued medication. After this history he came into my hands with the following additional symptoms : twitching of individual muscles during an attack, with frothy mucus from the mouth ; dulness in the head ; haziness before the eyes ; burning dryness in the throat ; obstinate constipation ; chilly feelings over the body ; general languor and heaviness of mind and body.

Œnanthe crocata has wrought a complete change in the last few months in brightening the mind, energizing the body, and in stopping the seizures for several moons. While I know full well that there is yet plenty of time for a relapse, this condition is so different from the previous history that we are warranted in hoping and expecting a continuance of the improvement. The œnanthe was used in the 4x and 6x.

Case III.—This was a little girl eight years of age, who presented the epileptic seizures with no special individual or family history to determine the same. And, what is strange, no medication had been used in the two or three years of the existence of these seizures, because it was thought that they would "wear off." These symptoms presented : Brain heavy and sluggish, with indifference, apathy, loss of memory, and absent-mindedness ; loss of words and power of speech, melancholia and delusions, muscular depression and some atrophy ; atonic dyspepsia ; sluggish circulation and acne. The other symptoms were those of general depression and such as are recorded in every severe case. It was certainly a typical case for the use of kali brom., which was used in the 6x to the 30x, with the result that there has been no return for five years. In the majority of instances this drug

will do better work in the potencies, except in those extreme cases where the number of convulsions will do more harm than the continued massive doses of the crude drug. In such cases the convulsive attacks may be limited by large doses of the bromide, when it may be possible to further the relief or cure by potencies of the same or other remedies.

CASE IV.—A fourth case is now presented, with the hope of emphasizing the fact that measures which are necessary before any therapeutic means can be of avail are often neglected. W. E. F., an engineer by profession, with no unusual history of vitiated tendencies or habits. In 1861, at the time of a collision, he jumped from his engine, and fell on a pile of scrap T-iron. Several injuries were inflicted, the chief being in the right parietal region of the head, showing contusion and laceration of the soft parts and many evidence of concussion. Again, in 1874, he was hit on the same side of the head by a brick falling from a building in process of construction. Not very long after this last accident some changes in speech and action were noticed, but in 1879 these changes were marked, and they gradually increased thereafter, showing defective memory, defective association of ideas and will; general loss of mental power; irritable temper and finally ungovernable passion; delusions of many kinds; continued threats of homicide, etc. To the epilepsy was added insanity, and he was admitted into the State Hospital in the latter part of 1892. The attacks became lighter and fewer, and he was sent home on trial in November 1893. But the attacks soon became worse, with excitement and violence and incoordination of muscular action; the dulness and irritability grew worse, and fear that he was to be injured by everyone near him, insomuch that he would take the initiative and suddenly hit any and everyone in reach. He was returned to the institution in December, 1895, where the symptoms became worse and worse. He lived till August 1899 (æt. 61), reduced by the awful attacks to a mere skeleton in body, with no semblance of mental power whatever. He was not under anyone's treatment very long at first, as his family wanted a permanent cure at once. Trephining was insisted upon by reason of a possible bone lesion due to traumatism. This was not permitted before October 1892, and was not done later. The principal remedial agent used (except the brief time he was under the care of the writer) was kali bromatum in massive doses; and at the institution Brown-Sequard's elixir was the main reliance, with the bitter tonics. The autopsy showed that there had been no bone lesion, except perhaps an extremely slight depression, but there were the adhesions of chronic meningeal irritation, atrophy of cortical structure in parietal and frontal portions, slight discoloration and degeneration of tissue, and an extraordinary amount of fluids, due, of course, to the long-continued irritation and tissue infiltration. Here was a pressure, though not made by bone abnormality, which was the cause that should have been removed by trephining, with whatever other surgical procedure was necessary to give relief to the congested centres.—*Medical Century*, March 1, 1900, reprinted in *Monthly Hom. Review*, May 1, 1900.

Gleanings from Contemporary Literature.

ON BACKACHE AS A SYMPTOM OF RECTAL DISORDER.

A Paper read before the New Cross Medical Society on March 7, 1900.

By E. Harding Freeland, F.R.C.S. Eng.,
Surgeon to the St. George's and St. Jame's Dispensary, London.

When my friend Mr. Alfred Kirby honoured me with an invitation to read a paper before your society it occurred to me that it would be more profitable if I were to address you on some topic of general interest rather than on some obscure disease or unique operation, the only possible interest in which would centre in the fact that it was a rarity. This, then, must be my excuse for venturing to introduce to your notice such a commonplace ailment as backache with the hope, moreover, that I may be able to show to some of you at any rate an old friend in a new guise, and possibly to excite fresh interest in a symptom, the constant reiteration of which must have become to many of you exceedingly wearisome.

The word "backache," when used in a general sense, would naturally include any and every ache or pain referred to the posterior surface of the trunk. But in medical parlance, I take it, this word has come to be used in a somewhat technical sense and to be restricted to pain occurring at or below the level of the loin. For my present purpose I propose to limit its meaning still further and to define it as any morbid sensation referred to that portion of the back which corresponds to the posterior surface of the sacrum. With this symptom you must all be perfectly familiar. Indeed, so common is it that in all probability hardly anyone here present completes his daily round without having heard it made the cause of complaint by one or other of his patients. And yet I have good reason to believe that the importance of this symptom is frequently under-estimated, and that its true significance is often overlooked. Were it not for the fact that this symptom gives rise to immeasurable distress its very commonness should render it worthy of our careful consideration and investigation, for it is superfluous on my part to remark that the more common the ailment the greater will be the number of sufferers seeking relief, and that in reality more good is attained by the relief of a score of people suffering from trivial but troublesome complaint than by the relief of one suffering from some obscure yet serious disease.

In considering the cause of pain referred to any part of the body it is first of all necessary to consider the nerve-supply of the part affected and then to ask oneself the question how a stimulus, directly or indirectly applied to the nerve terminals of the part, can act as a source of irritation and a cause of pain? Now it is quite clear that the stimulus which evokes response in the peripheral nerves of any part may be either central—i.e., having its origin in the brain or spinal cord—or peripheral. In the latter case the stimulus may be direct or indirect—i.e., it may be applied to the terminal fibrils of the nerves implicated or it may be transferred to these

through neighbouring nerves by reflex action from a distance. For the present I do not propose to take into consideration either central or direct peripheral causes, but to confine my remarks to reflex causes; and in order the better to appreciate these I would ask you for a moment to allow me to refresh your memory with regard to the nervous anatomy of the parts under consideration.

According to Kocher and other well-known authorities on cutaneous nerve distribution the parts covering the back of the sacrum are supplied with sensibility by the terminal filaments of the posterior primary divisions of the fourth sacral nerves. You will doubtless remember that the anterior primary divisions of these nerves divide into two branches, the larger of which again splits up into branches which course forward through the pelvis towards the base of the bladder, mingling as they go with branches of the pelvic sympathetic plexus. Some of these pass upwards on the walls of the bladder; others pursue a similar course on the walls of the vagina, a few reaching the uterus; others, again, to which I wish especially to direct your attention, are distributed to the lower part of the rectum. Passing through the space between the two sphincters they break up into filaments, some of which pass downwards to be distributed to the skin of the anus, while others pass upwards to be distributed to the mucous membranes of the anal canal and rectal ampullæ. Theoretically, then, one would expect to find backache frequently associated with derangement of the pelvic organs, and such indeed turns out to be practically the case.

In the minds of most of us there is no doubt a tendency to associate together backache and uterine disorder, and when a woman comes to us complaining of backache we instinctively think of the uterus as the organ most probably at fault. But, although it is true that uterine derangement and backache are frequently associated we should always be on our guard against rashly assuming that their relationship is one of cause and effect. My own experience is that these two conditions are not nearly so frequently interdependent as is usually supposed. Indeed, my conviction on this point is so strong that whenever a case presents itself in which these two conditions co-exist I make it a rule while admitting their possible inter-dependence, to be sceptical about this relationship. The same remarks apply with equal force to backache associated with functional derangement of the bladder. This brings me to the point which I wish especially to emphasize this evening—viz., that backache is frequently due to reflex irritation having its origin in the rectum, and that even when it is associated with symptoms referable to the other pelvic organs, the bladder or the uterus, the rectum will not infrequently be found to be the organ primarily at fault. The following brief *résumé* of an actual case well exemplifies the condition to which I particularly wish to direct your attention.

Case 1.—A man, aged 39 years, came to me complaining of a dull aching pain at the bottom of the back (over the sacrum) which came on usually after his lunch and persisted for the rest of the day, materially

interfering with his capacity for work. He presented features of a type which I shall presently endeavour to describe, and had for the past month been sitting day by day, week in and week out, at his desk, attending to urgent and anxious business. He stated that his bowels were regular, for although of late there had been a tendency to constipation he had managed to keep his bowels acting daily by purgatives. On passing my finger into the rectum I found it empty except for a hard fæcal nodule which was just within reach of the finger tip anteriorly. This and two others, all of which bore evidence of prolonged residence within the bowel, were removed by an enema, and under the influence of a saline purge each morning coupled with two-grain doses of quinine twice daily the pain rapidly vanished.

Cases of this type I could multiply indefinitely; and no doubt many of you will have observed, in common with myself, that backache is not infrequently a cause of complaint among men. In such cases of course the question of the uterus as a causative factor can at once be put out of court. In my experience, as I have just hinted, the man who comes complaining of backache usually conforms to a certain type, which it is important to recognise, for it is often the recognition of this type which is instrumental in directing attention to the true state of affairs. Usually endowed with considerable mental activity and conscientious often to the last degree, his mental capacity far outstrips his physical strength. He is capable, nevertheless, if put to it, of getting through a considerable amount of hard work and of enduring a considerable amount of mental overstrain. He is in a word wiry. But let such a one become overworked and overworried, let him, in other words, draw largely on his reserves of nervous energy, and he soon becomes nervous, irritable, morose, and generally out of sorts. This change in his condition is more noticeable to his friends than to himself. His digestion becomes deranged, but although he is cognizant of the fact he pays little heed thereto, for it is not his great trouble. His bowels, he will tell one, are regular, or, if not, that there is a tendency to constipation which he relieves perfectly by a judicious use of purgatives. If the stools be examined they will be found to contain scybalous masses with an admixture of gelatinous tenacious mucus of which in all probability he has no knowledge. But his chief cause of complaint, the ailment which worries him to the exclusion of all others and on which for the time being his whole mental energy is concentrated is a dull weary aching pain over the sacrum, sometimes continuous, sometimes intermittent, which prevents him concentrating his mind on his work at a time when it is important that he should give it his best and undivided attention. If the trouble be taken to analyse the group of symptoms which I have just endeavoured to portray it will be found that the only truly objective sign in the whole lot is the passage of scybalous stools and viscid mucus. This sign is the keystone of the whole situation, and to my mind it is of no doubtful significance—its presence points unmistakeably to chronic rectal catarrh. Having arrived so far, it is probably safe to conclude that the dyspeptic symptoms are due to catarrh of the stomach and that there exists, in fact,

a chronic catarrhal condition of the whole gastro-intestinal tract. The next question which arises is: How is the catarrh brought about? I believe that it is mainly in the following way. Nervous depression causes diminution of functional activity generally, in which the cardio-vascular system shares, causing a tendency to general venous congestion, and especially in the great venous system connected with the liver—the portal vein and its tributaries. This, in turn, working backwards causes congestion of the whole gastro-intestinal tract, and in process of time a catarrhal condition is set up with a tendency to the secretion of viscid tenacious mucus and the formation of hard scybalous fæces. These masses, passed on from the colon, sometimes get lodged in one of the rectal folds or just within the rectal ampulla and there act as irritants to the nerve terminals which are distributed to the lower end of the rectum. This source of irritation often manifests itself by reflex action in the form of pain or some other morbid sensation referred to the posterior surface of the sacrum. The presence of these scybalous masses can easily be confirmed by anyone who will take the trouble to pass his finger into the rectum.

At one end of the line then there is worry, which may be considered the prime factor, and at the other end worry—on account of the pain—as the ultimate factor in the case. As intervening factors there is the chronic catarrh, which prevents the patient from absorbing and assimilating a sufficient amount of nutriment to recoup his already jaded nervous system, and the formation of scybalous masses which, by the irritation which they cause, tend still further to jade the already wearied nerves. Thus a vicious circle is created which, unless the true condition of affairs is recognised, it it is very difficult to break. Once the condition of affairs is diagnosed, however, the indications for treatment are self-evident. These obviously are: (1) to remove the scybalæ; (2) to secure an efficient and regular action of the bowels; (3) to relieve the catarrh; and (4) to improve the general health.

For the relief of the catarrh I know of no more satisfactory remedy than ichthyol in doses of from five to ten grains or more night and morning. It relieves the congestion, improves the appetite, and stimulates peristalsis. Quinine in two-grain doses will also in some cases be found beneficial. Theoretically, no doubt, bearing in mind the prime cause, a complete cessation from work and a change of scene and air would be indicated; but usually the necessity for sticking to business which was the prime factor in the case still exists, and it is very seldom that the patient can be induced to relinquish his calling. Even if he could be persuaded so to do, it is a great question whether the anxiety over business neglected would not be a greater evil than the mental strain caused by a moderate amount of business done. Practically, therefore, I think that it is wise to steer a middle course, advising the patient to curtail his hours of work, to spend as much time as possible in the open air, to indulge in a moderate amount of exercise, to partake of as much good plain food as he can digest, and, in short, to adopt regular habits of living generally.

Let it not be thought, however, I wish to convey the idea that such cases occur exclusively among men; on the contrary, they occur with equal, if not greater, frequency among women who allowing for differences in habits, mode of life, and environment, conform mainly to the same type. My only reason for laying special stress on the occurrence of such cases among men has been that I was anxious to eliminate all idea of the uterus as a causative factor. But the aspect of such cases is not always quite so simple, and the pain or discomfort is not always due to what may be termed functional causes, but in many cases may be traced to more or less serious organic disease—e. g., piles, ulcer, and cancer—as exemplified by the following cases.

Case 2.—Some time ago I was consulted by a young married woman whose only cause of complaint was severe aching pain at the bottom of the back which tormented her continuously. This pain she had borne patiently for many months until about two months previously to my first seeing her so bad had it become that, other remedies having failed, she had submitted to excision of the coccyx but without relief. On digital examination of the rectum a circular ulcer of about the size of a sixpenny-piece was felt just within the rectal ampulla posteriorly. To make a long story short, *pari passu* with the healing of the ulcer the pain diminished and finally disappeared.

In this case a simple investigation in the first instance would have revealed the true cause, would have saved the patient months of suffering, and would have prevented a needless operation.

Case 3.—About two years ago I saw a woman, aged 55 years, who had unmistakeable signs of rectal cancer which was inoperable. A colotomy prolonged her life for some 18 months. This patient told me that for some six months before her symptoms definitely directed attention to the bowel her only cause of complaint was a continuous dull wearing pain at the bottom of the back.

This I believe to be quite a common occurrence in the early history of rectal cancer. The only symptom for some time is backache. What the ultimate result of this case would have been had it been diagnosed in its early stages it is, of course, impossible to say, but when we reflect on the brilliantly successful results of prompt surgical treatment in the early stages of rectal cancer and compare these with the hopelessly miserable condition of the patient when the disease has been allowed to drift on into the latter and inoperable stages it is reasonable to suppose that things might have been different. The lesson I think we should all learn from such cases is that when a patient comes to us complaining of backache we should not treat the symptom in a careless or perfunctory manner, putting it down to weakness, rheumatism, and so forth; that we should not rest content until every possible cause of the pain has been carefully investigated; and that no investigation should be considered complete until the state of the rectum has been ascertained.

So much then for cases of rectal disorder where backache is practically

the only symptom and where we have little else to guide us to the true state of affairs. I should like now to refer very briefly to a class of case where backache is associated with other direct symptoms which, unless properly understood, are likely to prove very misleading. It is not uncommon to find patients complaining of backache complicated by bladder disorder, as evidenced by frequency of urination or retention of urine; or by (?) uterine derangement, as evidenced by vaginal discharge. These cases, unless he is warily on his guard, form veritable pitfalls to the practitioner, as the following cases bear witness.

Case 4.—A man, aged 39 years, who was otherwise in the best of health, came to me complaining of a sense of weakness at the bottom of the back and irritability of the bladder of about three weeks' duration. He assured me that the bowels were acting regularly, yet under the influence of an efficient purge he passed a large watery stool containing several scybalous masses the colour and consistence of which betokened prolonged residence within the bowel. The highly satisfactory result of this method of treatment was effectually to relieve his symptoms.

Case 5.—I was sent for in hot haste to see a woman, aged 45 years, who was suffering from inability to pass urine and who in consequence was in much distress. She told me that she had suffered more or less from difficult urination for about a month and had been treated for this disability but without success. She further told me that this symptom had been accompanied by backache. So far from suffering from constipation she informed me that recently there had been a tendency to diarrhœa. Thinking that the urinary retention might be caused by a retroverted uterus I made a vaginal examination, and to my surprise found that cavity rendered almost impenetrable by what turned out to be an accumulation of fæces in the rectum. The removal of this by copious injections of soap and water completely relieved the symptoms.

In either of the above cases it would have been very easy to have misinterpreted the true state of affairs and to have fallen into the trap of treating the bladder instead of the rectum, thus leaving the main cause untouched and the patient consequently unrelieved. This error, as I have incidentally remarked, actually occurred in one of the cases. It is always well, therefore, in endeavouring to unravel cases similar to those which I have just very briefly narrated, to bear in mind the fact that any source of irritation having its origin in the lower end of the rectum is liable to cause functional derangement of the bladder. If this fact be borne in mind the practitioner will seldom go astray.

Before concluding I should like to say a few words on that very common class of case where backache and leucorrhœa are associated together as prominent symptoms, a good example of which is the following.

Case 6.—A young unmarried woman, aged 28 years, consulted me for backache associated with leucorrhœa of some six months' duration. On making a vaginal examination I noticed two external piles at the margin of the anus, and finding the uterus normal I forthwith directed my atten-

tion to the rectum, an examination of which revealed internal as well as external piles. When informed of the true state of affairs the patient vouchsafed the information that she had suffered from constipation and pain on defecation for some time past—a valuable piece of evidence which she evidently intended in the first instance to keep to herself. The upshot of the case was that the piles were removed with a speedy cessation of the symptoms.

In connexion with this case I would like to point out that in any case of leucorrhœa it is always well to bear in mind the fact that reflex irritation having its origin in the rectum may be, and often is, a determining factor and that the source of this irritation will frequently be found to be a crop of piles. I have repeatedly met with such cases and it is abundantly clear that no amount of tonics and astringent injections will cure them so long as the main cause remains untouched.

To sum up, the chief points which I have endeavoured to substantiate this evening are the following: (1) that backache is not only a common but also a very important symptom; (2) that whether it be practically the only symptom present or whether it be associated with other more or less definite symptoms it is well worthy of a careful and searching investigation; and (3) that no investigation should be considered complete until the condition of the rectum has been ascertained.—*Lancet*, April 21, 1900.

THE SANITARY USE OF WATER.

By Silas Griffith, M.D., Philadelphia.

(Read before the Homœopathic Medical Society, State of Pa., Philadelphia, Sept. 27, 1899,)

Water, as found in Nature. Sparkling in the diamond dewdrop; flowing from the fountain as clear as crystal; rolling in the mighty ocean waves; rising in gentle vapors from the earth and sea up to the cloud-regions, there to be distilled, condensed and aërated, ready to be distributed to the earth again in form of rain.

Cloud Water is pure, natural water, and because of its purity is a ready absorbent; it becomes contaminated as it falls in rain, especially in the beginning, for it becomes partially charged with impurities from the atmosphere, even before it reaches the earth.

Pure Water is the most essential requisite in the way of nourishment that can enter the human system. About 90 per cent. of our food supply is, in fact, only water. All drinking-water which is at all doubtful should be subjected to *chemical analysis* and to *microscopical examination*, but the only *absolute* test is the *physiological test.*

Spring Water.—Spring water is only as good as the source from which it comes. It percolates through sand; but at the same time it frequently takes up mineral substances, especially carbonate of lime, which cannot be digested nor assimilated by the vital organs of the body. Therefore, when it gets into the blood by weak action of the kindneys it incrustates in the joints, muscles and nerves, and causes rheumatism and premature old age.

Slow Sand Filtration for the Water Supply of Large Cities.—On a large scale the slow sand-filtration process is the most effective plan of purifying water, in the absence of distillation. In slow sand filtration the bacteria are removed by an organic, slimy pellicle which forms on the surface of the sand under the water. After a few days or weeks the pellicle becomes so thick as to clog the flow, and the surface of the sand must be scraped off and a new surface exposed. This process removes bacteria almost entirely, but it does not remove mineral impurities nor sewage; this latter, however, is partially burned up by the oxygen contained in the water, while in distilled water the oxygen is entirely driven off and must be replaced artificially, but the mineral impurities by distillation are left behind in the still to be thrown away, and are thus entirely removed.

Boiled Water.—In the process of boiling water the oxygen escapes and the dregs remain, although it does destroy germs; filthy water supply should not be tolerated.

Filtered Water.—Individual domestic filters of the most approved kind are often of decided benefit for clearing water for special purposes, but in the present state of sanitary science the best are not considered continuously germ-proof.

Distilled Water.—Water to be distilled by a new-process water-still is placed in the retort or boiler, and as steam is generated it separates from the dregs, which are left in the boiler, and the pure steam is condensed and becomes water again. A very important part of the process is re-oxygenating it with pure air, in order to make it a perfect drinking-water. It is perfectly free from all germs.

THE ALUM TREATMENT.

For Treating the Water Supply of Large Cities.—A method of filtering impure water much advocated now by interested parties is the alum process. In this a solution of alum is mixed with the water, which by acting on the lime and other matter is decomposed and makes a light flocculent precipitate which requires a long time to settle, and in doing so tangles up the bacteria and other impurities, and afterwards, when forced through a bed of sand, leaves these impurities behind. This is a more rapid process than that of sand filtration, and if it were possible to exactly apply and distribute the precise quantity of alum requisite, it might be reasonably safe, although even then slight traces of this extremely deleterious substance would be likely to remain.

But, as a matter of fact, this exact supply and distribution *cannot be secured*, because the amount of lime and other salts and bacteria *vary in the same day*, and even from *hour to hour*. So that the quantity of alum will either be insufficient to remove all the impurities from every portion of the water, and an absolutely equal distribution of the alum cannot be secured, so that the bacteria will come through freely or else an excess of alum will have to be used, and that will appear in the filtered water, and if used for drinking habitually and constantly, serious *impairment of health* will result. It is said that fish will not live in water so treated.

As such waters are not only insanitary, but also extremely destructive to steam boilers, it is to be hoped that the medical as well as the engineering profession may take cognizance of this proposed plan for the employment of these patented devices, and insist upon *Slow Sand Filtration*, which is now almost universally in use in the great cities of the world, and has been thoroughly tested by more than fifty years' practical experience.

Artesian Well Water.—Many persons think artesian well water is the purest, but this is often a great mistake. It is also a common notion that a *deep* well or a *bored* well is an *artesian* well, while *shallow* wells or *dug* wells are not; but this is also a mistake.

An artesian well is one which is carried down through an impermeable stratum of clay or rock, which thus forms a *water-tight roof* over the source of supply. This may be 50 feet or 3000 feet; it is an artesian well, all the same. This impermeable roof slopes off to higher ground in one direction or another, often for hundreds of miles, and finally reaches the surface. The rainfall gets under the roof, which may be sandy beneath and resting upon another water-tight stratum, and so fills this space; and when a well is bored down the water rises and frequently overflows; but the water is liable to be charged with impurities and gases, especially under strong pressure down below, while the source of supply itself may be only a few miles away, where the stratum dips rapidly, and these impurities thus run down these channels and taint the water. Frequently, when such a well is started, even of a very good quality of water, the continuous flow for a few months or years will gradually bring down mineral contamination or other impurities, and the quality of the water will rapidly deteriorate. These wells are often carried through several strata before a good supply is reached.

Living springs, so called, are usually in character somewhat similar, breaking through strata at the foot of a hill. A few years ago a *mountain valley in Switzerland* was infected with typhoid fever. Shortly afterward this disease appeared with great virulence in another valley many miles away, and totally out of communication with the other. The inhabitants procured their drinking-water from a splendid spring in the neighborhood, while the other valley was drained by a creek which disappeared in the mountain. Investigations made by the government resulted in showing that a saline solution, when poured into the creek in the one valley, appeared in a day or two in the spring water of the other; but the filtration between was so perfect that solutions of boiled starch poured into the creek where it disappeared could not be detected by the iodine test in the water of the spring; and yet the typhoid bacilli obviously went through freely. This may be the case also with the water of artesian wells.

The only absolute test for the purity of the water is the physiological one, for the most brilliant and transparent waters are often the most dangerous. The typhoid bacillus has never been detected in ordinary running water, and the same is true of other pathogenic bacteria. When water is known to be unwholesome or grossly polluted, the source of supply

should be changed. Slow sand filtration for large cities is a guarantee to some extent against accidental or sporadic infection.

Conclusion.—Taking the case of sanitary water service, then, in its broadest aspects, it may be said that domestic filters are frequently useful in a limited sense only, and for temporary use.

That *artesian* water or *spring* water varies with the source of supply.

That *creeks* or *rivers* with a large population along their banks are unfit sources.

That distilled water, however pure, must be throroughly oxygenated by sterilized air in order to be perfect drinking water.

The death-rate of a city largely determines the quality of the water used. The appearance of the water is no proof of its sanitary quality.

Muddy water, like that of the Mississipi, may be highly sanitary, while that of a lagoon may be as clear and sparkling as crystal, and yet be laden with death.

For clearing or purifying the water-supply of large cities the system of *slow sand filtration* as practiced in London and Hamburg is the only method which has thoroughly stood the test of *experience.* The habitual use of alum, of hydrochlorate of lime, or any such caustic or corrosive chemicals, is totally *inadmissible.*

Far more, even, than pure air is pure water requisite for civilized man, and it is the imperative duty of our honored profession, to which all look for safe sanitary counsel, to hold fast to and teach the truth, and point out the dangers which inevitably follow the violation of Nature's immutable laws.—*The Hahnemannian Monthly*, March, 1900.

THE NUX VOMICA PATIENT.

E. R. McINTYRE, M.D., CHICAGO.
Prof. Mental and Nervous Diseases, Dunham Medical College.

His mind is defective, his thought travels slow.
He makes use of words that are wrong, just to show
That his memory is rapidly failing.
He's irritable, cross, ceases not railing
At other men's actions, looks, and behavior.
There's nothing that suits him, not even his Savior.
He is proud, malicious and zealous inclined.
He is wild with his passions, they are all in his mind.
The sweet milk of kindness in him becomes sour.
He never is known to be happy an hour.
His appetite fails him, he feels he will choke
On a morsel of food or the cream of a joke.
Eructations, of passions as well as of gas,
Are as common as sleep in a medical class.
His forehead is tensive, as if it were pressed,
With tightness and roughness and rawness of chest.
He's troubled with headache in center of brain,

And feels the skull splitting asunder with pain.
His scalp becomes sensitive to touch or the wind.
Like *Belladonna*, but differing in kind.
The latter is sore, the hair causing pain,
Because of severe congestion of brain;
While the former feels bruised from spinal reflex,
With eyes that are painless and full of red specks.
His smell is over-sensitive, he is likely to faint
From odors of brimstone or limburger taint.
There is acrid discharge and obstruction of nose,
Which he always is trying in vain to unclose.
His face is earthy, or sickly, or blue,
Chlorotic or red, or distressed it is true,
And his forehead still pains him, likewise his cheek,
With twitching of muscles that cause him to shriek.
His tongue you will find, like a rich man's yard,
Is clean on the front, while behind it looks hard;
It is dry, heavy, stiff, with difficult speech,
Not suited to ladies or he that would preach.
His breath is offensive, so is his taste;
Because he's been living and eating in haste.
In his throat a sensation of swelling or lumps
With stitches to ears, as felt in the mumps,
From catarrh in the throat and spasm of nerve,
That under the arch of aorta does curve.
He frequently finds when a "passage" he'd seek,
That the spirit is willing, but the flesh is too weak;
And then when a stool he's expecting to find,
He's surprised to discover there's nothing but wind.
He frequently speaks of the "piles" he has now.
Whose presence is proof of his troubles,
Since his wash woman asks him how he got hurt,
For she discovered the blood on his shirt.
There's pain in the back in the morning at four,
In the dorsum, I think as a little bit lower.
When he turns in the bed, so now it would seem,
Dull pains or stitches in back make him scream.
There's spinal sclerosis because of the use
Of whiskey, drugs, spices, or sexual abuse.
And this is the reason (I'll give you a tip).
For pains that go wandering from toes into hip,
And for trembling and stiffness of legs and of feet,
When he is attempting to walk on the street.
There are painful cramps in the calves or the toes.
From spinal reflexes, so far as he knows,
And these are soon followed, as cars in a train,
By shocks in some part of the body or brain.
Convulsion of muscles, tetanic, severe,
Produce great contortion with mind that is clear.
He's sleepy and stupid and drowsy all day,
But when he retires, sleep flies away.
It often returns quite late in the night,
With visions and night-mares that fill him with fright.
At three in the morning we frequently find
Him awake from the thoughts that crowd on his mind.
There's spasm of bladder from sexual excess,
Or tarrying long at his whiskey, I guess.

He passes his urine by drop and by drop,
And then when he wants to he can't make it stop.
At night, when asleep, he is dreaming, may be
Of seeking a place where no one can see,
Or other dreams, may be have run in his head,
That wake him to find he is wetting the bed.
Painful erections that arouse him from sleep,
Or else an emission may cause him to weep,
Because of a feeling that he will sustain
A loss of his power, if not of his brain.
These symptoms are caused by disease of the cord,
And so is the sensitive skin in a word.
There's itching, burning, and ecclymosed patches,
That still remain stinging after he scratches.

NUX VOMICA—AN ACROSTIC.

Nerves on an edge from mental strain,
Under coffee, tobacco, or alcohol's rule,
'Xceeding constipation pain.

Vast urging but *no* stool.
Oft wakes with headache and lassitude great;
Much pain in the sensitive hemorrhoids too;
Is depressed, dyspeptic and dissipate.
Catches cold from *dry wind*, has hernia too,
Aggravated by *food* or *drug*, strong and *crude*.

Louisville, Ky. A. L. MONROE.

—*Hahnemannian Advocate*, March 15, 1900.

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THERAPEUTICS AS A SCIENCE.

VI.

(*Continued from* Vol. xix, No. 4, p. 138.)

GROWTH OF HOMŒOPATHY IN HAHNEMANN'S MIND (continued).

IS IT TRUE that Hahnemann established the law of Similars on the single cinchona experiment that he made when translating Cullen's Materia Medica? This is what Dr. Conrad Wesselhoeft maintains. Quoting Hahnemann's account of the cinchona experiment which we have given in full before, Dr. Wesselhoeft says: "This, so far as known to me, is the only experiment Hahnemann ever made in order to establish his principle of cure, unless we consider his numerous other provings in the light of experimental tests. This view seems to me untenable, because Hahnemann considered the proof of the law furnished by his personal tests of peruvial bark as sufficient. So that his other provings were made chiefly for the purpose of discovering the 'dynamic' effects of drugs, irrespective of the law which, in the opinion of Hahnemann, already rested on a firm basis."

We must confess our inability even to understand what is meant in the above passage. Dr. Wesselhoeft does not give any reasons whatever for his extraordinary assumption that Hahnemann considered his personal trial of the cinchona bark as affording sufficient proof of the similia similibus law so as to require no further corroborative proof in the shape of other experiments.

Hahnemann himself no where says so. He speaks of this first trial as the event that was the dawn which subsequently brightened into the most brilliant day of the medical art. He speaks of it as leading him to think of the probability that cinchona cures intermittent fever because it can produce a similar fever in the healthy. How did he set himself to verify if this probability was a certainty? Let us hear from him how he did so. In his *Essay on a New Principle for Ascertaining the Curative Powers of Drugs*, published in 1796, that is, six years after the Cinchona experiment, he says: "The true physician, whose sole aim is to perfect his art, can avail himself of no other information respecting medicines, than—

"First—*What is the pure action of each by itself on the human body?*

"Second—*What do observations of its action in this or that simple or complex disease teach us?*

"The last object is partly obtained in the practical writings of the best observers of all ages, but more especially of later times. Throughout these, the, as yet, only source of the real knowledge of the powers of drugs in diseases is scattered; there we find it faithfully related, how the simplest drugs were employed in accurately described cases, how far they proved serviceable, and how far they were hurtful or less beneficial. Would to God such relations were more numerous!

"But even among them contradictions so often occur, one condemning in a certain case what another found of use in a similar case, that one cannot but remark that we still require some natural normal standard, whereby we may be enabled to judge of the value and degree of truth of their observations.

"This standard, methinks, can only be derived from the effects that a given medicinal substance has, by itself in this and that dose, developed in the healthy human body.

"To this belong the histories of designedly or accidently swallowed medicines and poisons, and such as have been purposely taken by persons, in order to test them; or which have been given to healthy individuals, to criminals, &c.; probably also those cases in which an improper powerfully acting substance has been employed as a household remedy or medicine, in slight or easily determined diseases.

"A complete collection of such observations, with remarks on the degree of reliance to be placed on their reporters, would, if I mistake not, be the foundation stone of a materia medica, the sacred book of its revelation.

"In them alone can the true nature, the real action of medicinal substances be *methodically* discovered; from them alone can we learn in what cases of disease they may be employed with success and certainty."

There was no other possible method of procedure by which the law, of which he had just got a glimpse, and a glimpse only, could be verified than by that which Hahnemann adopted as indicated above. He would not have been justified in proving drugs at random before having some knowledge of their positive and established curative actions in some diseases. And how could he arrive at this knowledge except from the records of medicine past and present? And how could he have a knowledge of the pure actions of medicines, before he could commence actual provings, except from the same records whenever there were found in them symptoms of drugs which might have been prescribed singly, or of poisons (which are but another name for drugs) which might have been taken accidentally or voluntarily or administered for criminal purposes, or administered to criminals for the sake of discovering their actions? It is only after having possessed both these kinds of knowledge that he could venture upon instituting provings upon himself and others.

This is what he did, and yet Dr. Wesselhoeft thinks it was not the right mode of procedure. "It is a noteworthy circumstance," says he, "that instead of pursuing his inductive method further, for the purpose of still more confirming his newly-discovered law of cure, Hahnemann preferred to resort to medical literature of his time for the discovery of other evidence and it may seem strange to us that he chose this instead of the testimony of his senses."

Hahnemann did not remain satisfied with the evidence furnished by medical literature in favor of the law of similars. This evidence encouraged him to observe the action of drugs as chance presented in his way more carefully than he had done before, and to institute provings, rather in a timid way, and with each such proving that he made the evidence grew stronger,

so that at the end of six years from his first, the Cinchona, proving, he could say in the *Essay* above quoted: "In my additions to Cullen's Materia Medica, I have already observed that *bark*, given in large doses to sensitive, yet healthy individuals, produce a true attack of fever, very similar to the intermittent fever, and for this, probably, it overpowers, and thus cures the latter. Now after mature experience, I add, not only *probably*, but quite *certainly*." He cites fifty-five drugs as synthetic illustrations of the maxim that "by choosing a remedy for a given natural disease that is capable of producing a very similar artificial disease, we shall be able to cure the most obstinate diseases."

All of those drugs it will be noted, do not afford the illustration of the maxim similia similibus. His observations, however, on these drugs are worthy of perusal even after our mastery of the much richer materia medica which he and his followers have built. He does not appear, as we have said above, to have proved any of these drugs, in the *systematic way* that he recommended afterwards and carried out himself. But of a great number he had observed the pure effects, as must be evident from such phrases as "I have ascertained," "I know," "from my observation," and from his speaking of some drugs as "having produced," or "does produce," such and such symptoms.

Where he had not observed the pathogenetic effects of any drug, but was sure of its curative effects, he recommended its proving. Thus: "We should endeavour to find out if the *millefoil* (*achillea millefolium*) cannot itself produce hæmorrhages in large doses, as it is so efficacious in moderate doses in chronic hæmorrhages." Where there was doubt about the medicinal virtues of some drugs he recommended their proving to solve the doubt. Thus: "The dispute as to whether the *brook lime* (*anagallis arvensis*) and the bark of the *mistletoe* (*viscum album*) possess great curative virtues or none at all, would immediately be settled, if it were tried on the healthy whether large doses produce bad effects, and an artificial disease similar to that in which they have been hitherto empirically used."

Where he had not himself observed any particular symptoms ascribed to a drug, he plainly said so: "The fact that *fool's parsley* (*æthusa cynapium*), besides others affections, as vomiting, diarrhœa, colicky pains, cholera, *and others for the truth of which*

I cannot vouch (general swelling, &c.,) produces so specifically imbecility, also imbecility alternately with madness, should be of use to the careful physician in this disease, otherwise so difficult of cure." Then he goes on to say how the use of the drug had some good but temporary effect on himself. "I had a good extract of it prepared by myself, and once, when I found myself, from much mental work of various kinds coming upon me in rapid succession, distracted and incapable of reading any more, I took a grain of it. The effect was an uncommon disposition for mental labor, which lasted for several hours, until bed-time. The next day, however, I was less disposed for mental exertion."

From this *Essay* it appears that Hahnemann's conception of the law was still very vague, and that six years' experience had not enabled him to advance much beyond the first idea of it that dawned upon his mind from the Cinchona experiment. As Dr. Dudgeon has remarked, "he seems to have contented himself with hunting up in the works of ancient authors for hints respecting the physiological action of different substances and to have tested them but sparingly, if at all, on his own person or on his friends; and in his researches, to have looked more for the peculiar and striking effects of the drugs than for those minute shades of symptoms which we find he so carefully recorded in his later years. In fact, he seems rather to have searched for parallels to those abstract forms of disease described in the works on nosology, than for analogues to the individual concrete cases of actual practice."

From the two cases that he published in Hufeland's *Journal* in 1797, it will appear that his homœopathy, though it was becoming more and more clear, had still in it the haziness of a crude conception. His first case, that of a "rapidly cured colicodynia" by Veratrum Album, may be taken as a good illustration of a true homœopathic cure, though before the cure there was fearful aggravation of the disease from the use of massive doses of the remedy. He gives the following graphic description of the course of a severe attack:

"Four hours or four hours and a half after eating of such food (carrots, every species of fruit, &c)—having previously felt quite well—a certain movement was felt about the umbilical region; then there took place suddenly, always at the same place, a

pinching as if by pincers, but attended with the most intolerable pain which lasted half or a whole minute, and each time suddenly went away with borborygmus extending to the right groin—about the region of the cœcum. When the attack was very bad the pinching came back, and the subsequent borborygmus more and more frequently, until in the worst attacks they were almost constant. There occurred also the sensation of a constriction above and below, so that flatus could pass neither upwards nor downwards. The uneasiness and pains increased from hour to hour, the abdomen swelled and became painful to the touch. Along with all this suffering, *which resembled a fever*, there came an inclination to vomit, with sense of constriction of the chest, the breathing was shorter and attended with more and more difficulty, cold sweat broke out, and there came on a sort of stupefaction with total exhaustion. At this time it was impossible for him to swallow a drop of liquid, much less any solid food. Thus he lay stupefied and unconcious, with swollen face and protruded eyes, and without sleep for many hours; the attack of the spasmodic colic gradually subsided by a diminution of the pain, then followed some escape of flatus either upwards or downwards, and so the attack went off (sometimes only after sixteen or twenty-four hours after its commencement). The strength only returned after three or four days, and thus he was again like a person in health, without any other uneasiness except the dull fixed pain before described, and general weakness and sickly appearance. He could not positively say, whether this dull pain went off during the severe attacks or not, but he thought it did."

It is not a little remarkable and even strange that Hahnemann should have looked upon all the symptoms which preceded the coming on of "an inclination to vomit," as *resembling a fever*. However this may be he at first tried all sorts of vermifuge, antispasmodic and carminative remedies in vain, and when the condition of the patient became very serious, "inasmuch as the colicodynia began to appear upon the use of the smallest quantity of vegetable food," "I determined," he says, "to give him a medicine which produced very similar morbid symptoms. The similarity of the griping pain, anxiety, constriction of the chest, fever, loss of strength, &c., produced by *veratrum album* appear-

ed to me calculated to give permanent relief." Accordingly he "gave him four powders, each containing four grains, and told him to take one powder daily." After fearful aggravation from the second powder, so much that the patient had to wrestle with death, the colicodynia disappeared for good.

His second case, which will be found under the *Clinical Record* of this number, is also an illustration of a homœopathic cure, though strangely enough while he gave a full description of the disease he said very little about the homœopathicity of the drug wherewith he cured it. He simply said—"a medicine was required which could produce anxiety, and diminish the easy action of the bowels. The choice fell naturally on *nux vomica.*" The drug wrought a wonderful cure, without the slightest aggravation, though it was prescribed for some days in doses of four grains twice daily. In this case also he had used a number of "other medicines, celebrated in asthma" without effect, before he prescribed nux vomica. It is not a little remarkable also that while he required a similarly-acting medicine which could "diminish the easy action of the bowels," in his narration of the symptoms of the case he made no mention of any bowel symptom which the patient might have had. Nor among the symptoms that he gives under Nux Vomica in his *Essay on A New Principle,* is to be found breathlessness or dyspnœa which is the characteristic of asthma. So that in the case under consideration his choice of the drug was determined not by the actual asthmatic symptoms, but by a single symptom—anxiety—which is common to many diseases.

The cases that he published in the following year (1798), under the heading of *Some Kinds of Continued and Remittent Fevers* do not bear evidence of any further growth of homœopathy in his mind. His treatment of these cases shows that he had not yet been able to emancipate himself from the use of orthodox, unhomœopathic remedies, and that his use of similarly acting remedies was based upon general and vague and not upon that minute and definite similarity which he afterwards showed to be essential in the application of the law of similars.

Thus, in speaking of the treatment that he pursued in a kind of sporadic fever which prevailed in January 1798, he says: "On the one hand the shortness of the stages, and on the other the

congested state of the chest, the dyspnœa and suffocating cough, contra-indicated the employment of Cinchona. *St Ignatius' bean* on the contrary produced effects that were truly surprising. .....In general this remedy appears to be more suitable than Cinchona in intermittent fevers characterised chiefly by a longer duration. The fever terminated at the end of two or three days without leaving any traces, or any weakness. Ignatia also removed completely, or nearly so, the dyspnœa and suffociating cough in those that presented these symptoms."

In speaking of the treatment of a very dangerous form of influenza that prevailed in April of the same year, and which was characterized by drawing and paralytic pains in some one or other parts of the body or in several limbs at once, accompanied by fever, he says that while the ordinary remedies failed, "Opium subdued the heat and the excessive perspiration, also the delirium and the somnolence; but it increased the constipation; in general it did not seem to remove the malady generally. *Camphor*, on the contrary, surpassed all the expectations that could have been formed of it: it was efficacious, and I may say specific, in all the stages of the disease, accompanied or not by fever, especially when it was given as early as possible and in large doses." In some cases he gave very enormous doses indeed, fifteen grains a day for the first two days, increasing it to thirty and even forty grains in twenty-four hours, with the happiest results. "I am afraid," says he, "that this rapid disappearance of the symptoms, the yellow, brown or black coating of the tongue, the nauseous and bitter taste, the constipation, and the sickness, removed often within the twenty-four hours by the use of camphor alone, given in large doses, will not please the orthodox partisans of the saburral school. Nature, to be sure, often refuses to conform to the requirements of systems, the more is the pity for the dogmatic physician who attempts to fight against her."

These remarks may be applied with great force and propriety to the purists and so-called Hanemannians of our school in the present day. What would they say to such treatment, and such successful treatment, of Influenza with huge doses of Camphor by the Master himself, just at the time when he had discovered the errors of dogmatic medicine and was clearing the way for

the establishment of rational or scientific medicine based upon a law of nature? Was this treatment of Influenza with Camphor homœopathic or palliative? Hahnemann does not tell us here what it was. From the symptoms of Camphor he had given in the *Essay* he probably intended it to be an illustration of homœopathic cure. But much later, in the Preface to the article Camphor in the *Materia Medica Pura*, he called the treatment palliative. Thus: "When the influenza endemic in Siberia comes among us, when the hot stage had already commenced, Camphor is of service, only as a palliative certainly, but an invaluable palliative, seeing that the disease is one of short duration. It should be given in frequent but ever increasing doses, dissolved in water as above described. It does not shorten the duration of the disease, but renders it much milder, and hence it conducts the disease innocuously to its termination. (On the other hand, Nux Vomica, in a single dose, and that the smallest possible, will often remove the disease homœopathically in a few hours.)"

Neither do the three cases that he subsequently published in the same year (1798), under the name of *Some Periodical and Hebdomadal Diseases*, show that his choice of remedies, though followed by brilliant cures, was strictly under the guidance of the law he was going to establish.

The first of these cases was one of periodical asthma which "came on regularly every Monday afternoon. Eight grains of St. Ignatius' bean once diminished the attack in a marked manner and the weakness did not occur; but strangely enough, the following Monday this attack came on with renewed force. Cinchona bark given the following Monday in the dose of half a drachm in the morning and a drachm after dinner, completely suppressed the fit, and after two more doses all traces of the affection had disappeared." He mentions as a circumstance worth noting, "that previously the Cinchona had always failed in the same person against his asthma when it was continued and not periodical."

The second case was one in which, we are told, "there was evidently an intermittent fever with a quotidian type, and another with a hebdomadal type. The employment of Ignatia continued for a week, until the Thursday, entirely removed the febrile symptoms affecting the head. Given also on the Thursday the hebdomadal attack far from diminishing, reappeared, on the contrary, with more violence, but was not followed by lassitude. I discontinued the treatment during the subsequent week, indeed all the corporeal functions were performed regularly, the febrile commotion in the evening and the perspirations by day had disappeared, gaiety, appetite and sleep were restored. From that time I administered every Thursday, with great success, a suitable

dose of Cinchona. The hebdomadal fever did not return and the fever was cured."

The third case was one of hæmaturia in a very hypochondriacal man, in which "there was at the same time fever, great debility and sleeplessness." The febrile symptoms diminished under Ipecacuanha in the morning and Sulphuric acid in the evening, "but the hæmaturia re-appeared the fourth day at seven o'clock in the morning, immediately after awaking, as on the first occasion, and twice on the seventh day at the same hour. Notwithstanding all the prejudices against the employment of Cinchona-bark in hæmorrhages, I gave a suitable dose of it every evening before going to bed, fearing to miss the hour in the morning when it ought to be given. Not knowing if the fit, in place of offering a hebdomadal type, would not occur every three days and a half, as frequently happens, and if an attack might not be expected on the afternoon of Thursday, I prescribed a dose of Cinchona for that day at noon, at the same time continuing the evening dose. But before the patient could take it, an attack of hæmaturia, though not a very severe one, occurred on the Thursday morning about eight o'clock ..... I consequently altered my treatment: I thereafter gave every morning a dose of Cinchona, taking care to have the patient awakened an hour before his usual time of waking, at six o'clock, permitting him either to go asleep again, which he generally did, or to get up. In the course of a fortnight the hæmaturia was quite cured."

We have thus no evidence from the cases published in 1798 that they were treated under the guidance of the law of similars. Hahnemann himself does not say so, and indeed he does not give any reasons for the choice of his remedial agents,—Ignatia in some cases, Camphor in others, China in some others. We do not think he would have omitted to do so if he were sure of the similarity of action of these remedies in the cases in which he used them. On the contrary we find him appealing to experience and not to the law. Thus with reference to hebdomadal diseases he says: "The hebdomadal type which diseases sometimes observe, recurring towards the middle of the fourth day, the seventh, fourteenth, twenty-first, thirty-first days (the middle of the fourth week), &c., appears to differ essentially from the daily aggravation of most disease, which we observe to take place in the evening, and from the types of quotidian, tertian and quartan intermittent fevers. Experience has taught us that St. Ignatius' bean does not suit the first of these types, which seems peculiar to hysterical, hypochondriacal and spasmodic diseases."

(To be continued.)

MALARIA, MOSQUITO, AND DRINKING WATER.

(Communicated)

In a report "On the Health of the Riparian Municipalites on the North of Calcutta and on the East Bank of the Hooghly," published in the Calcutta Gazette of the 11th July 1900, Dr. Rogers Professor of Pathology, Medical College, Calcutta, writes that "an inquiry into the malarious nature of a tract of country will be incomplete, in view of recent discoveries, if all reference to the distribution of the anopheles genus of mosquito is omitted,—for it must now be taken as proved that this insect may communicate the disease, although on the other hand, it must be clearly borne in mind that this is a very different thing from saying that the bites of mosquitoes are the only agency by which the malarial organism can gain access to the human body." His investigations have enabled him to subordinate the mosquito theory to his own theory of want of pure water supply as a chief cause of malaria. He has not overlooked the drainage theory, for he says that "although it appears to be clear that a pure water-supply is the most important measure for reducing the amount of malaria in this tract, it is no less certain that efficient drainage would also materially benefit the health."

The remarks set forth above deserve the most careful consideration of all concerned in the health of not only the Riparian Municipalities but of the people of Bengal generally, for at the present time, there is scarcely in Bengal a locality, which does not count its victims from malaria. Let us therefore observe how far the theories advanced as regards the causation of malaria are borne out by facts.

There was a time, still in the memory of many living men, when malaria, which has been desolating the fair villages of Bengal for a little over half a century, was scarcely known to its people. It is true that the *mahamari* of Gour, the ancient capital of Bengal, could be traced to a period as far back as 1575 A.D., but after depopulating that once prosperous city, the enemy appeared to have taken rest, and there was a lull for nearly three centuries. It was in 1859, that fever of an epidemic character terminating life in many cases, in two or three days, broke out in Oola in the Nuddea district and from that time the disease has been steadily and unrelentingly extending its reign. It is, there-

fore, to be questioned that if a particular class of mosquitoes communicate the disease to the human system, were there no mosquitos of that type before the latter half of the nineteenth century, for it is an undeniable fact that mosquitoes have existed in India from time immemorial, and we find mention of them in the Ramayana and the Kasi Khanda; it is difficult to assert whether the anopheles genus existed at that time or not. Again, if it be correct to say, that this particular class of insects co-exist with insects of other classes which go by the common name of mosquitoes, and that they increase and decrease simultaneously at certain seasons of the year, it remains to be explained, how it happens, that in February and March every year, i.e., during the spring season when mosquitoes are known to be a positive nuisance, cases of malarious fever instead of increasing are so remarkably few.

Assuming the observations of Dr. Nield Cook (Health Officer of the Calcutta Corporation) to be correct, that the breeding places of the anopheles genus "are small tanks generally containing rather foul water and often a fair amount of low vegetation" and "small ditches," it is a patent fact, that the dry months of February and March are particularly favourable to their propogation. For it is during these months that the puddles and ditches reach their lowest water mark and they, therefore, fulfil the conditions laid down by Dr. Cook for the breed of this particular class of insects. If, as Dr. Ross holds, any particular class of mosquitoes had been the originator of malarial fevers it stands to reason, that the dry months between February and April which satisfy the most favourable condition for the breeding of anopheles would have counted the largest number of fever cases, which as a matter of fact, known to all medical men practising in malarious places, are markedly few in those months.

Dr. Rogers tells us that he mapped out all the pools and tanks in a small area in a portion of Maniktala, and examined them systematically. He found larvæ of the anopheles genus in all of them, but it was worthy of note that he was unable to find any cases of fever near these infected tanks and pools.

On this head Dr. Kolle, who has just returned from South Africa, and given the Berlin Medical Society the benefit of his

views as to the diseases of that part of the world, observed among other things, "that although mosquitoes are found all over South Africa there are many places where there is no malaria." He admitted, however, that the mosquitoes may not be all of the same species throughout the country. Admitting that it is the anopheles mosquitoes alone which are able to communicate malarious poison in the way they are supposed to do, we shall have to admit that they must first feed upon malaria stricken patients, and that without the poison, which they can thus obtain from human subjects, they must be innocent. The question therefore, still remains to be solved, how and whence do the primary germs of malaria, the so-called Laveran's parasites come ?

To turn to the question of pure water-supply on which Dr. Rogers has laid so great stress in his report. The lamentable condition due to malaria of Hooghly, Bansbaria, Tribeni and many other villages on the west bank of the river, which enjoy the advantage of a better supply of drinking water, than many hill stations without filtered water arrangements, weakens the argument that "a supply of pure water is the most important measure for reducing the amount of malaria." The deplorable condition of places under the Howrah Municipality, such as Bantra, Shibpore, Baksara, Santragachi is an instance to the point and furnishes a strong illustration of the fact, that although cholera, dysentery and other diseases of the alimentary canal are materially held in check by a supply of pure water, it plays a comparatively unimportant part in reducing malarious fevers. Not long after the introduction of filtered water in Howrah in January 1897 the places named above became a prey to a severe visitation of malaria which was lying in a dormant state, after making awful havocs between 1871 to 1875. It would be needless to repeat the woeful history of the first out break of malaria in Sibpore, for it is now generally known, that soon after the filling up of the canal which passed by the name of Chowdry Garh, causing obstructions to many water courses, fever of an epidemic character broke out in a severe form. Its intensity increased from year to year and in 1874 the death rate reached its climax. Many persons still bear witness to the fact, that during the Durga Puja days of 1874 the sound of the Puja celebration drums, was drowned by the wailings of the survivors

of the deceased. From 1876 to 1896 fever cases markedly abated, and became fewer every year. The largest number of cases occurred only between October and December.

Thus, it will be observed, that people were allowed respite for nine months in the year, but the malaria, which has broken out since the introduction of pipe water has excelled that of 1871, in having a larger number of cases. It is true, that heavy though the death rate has been during these years, it was less than that of 1874, but at the same time it has another melancholy fact connected with it, namely, that it has proved more persistent than its predecessor. It has been harassing its subjects for the greater portion of the year, from June to January, most of those who escape with their lives are allowed to enjoy comparatively but still indifferent health for 4 months only, after which they have again to take to bed. Is filtered water then, it may be asked, the cause of this change? Certainly not.

The evils are due mainly to a defective system of drainage, without which pipe water would have been a blessing indeed.

On the other hand, places without an adequate supply of good drinking water, whilst they suffer badly from fever during and for two or three months after the rainy season, enjoy freedom from malaria during the hot season. Thus at a time when nothing but foul water, drawn from stagnant tanks and ditches reduced to their lowest level, containing all sorts of impurities, furnishes the people with the only drinking fluid, when cholera, dysentery and other deseases sometimes decimate whole villages, it is a noteworthy fact, that it is during this very time of scarcity of water which reaches its acme in April and May that malarious fever cases become scarce.

The pecularities of the fever, which Dr. Rogers has omitted from his report, also throw some light on its causation and tend to shew, that it is due not so much to any peculiar class of mosquitoes, or to want of supply of pure water, as to dampness of the soil to whatever cause assignable.

As already stated the fever does not continue throughout the year. It varies in intensity with the change of season. It makes its appearance when the rainy season sets in. It reaches its climax when the soil is thoroughly saturated with moisture, and it abates when the powerful summer sun dries up the ground

to cracks and fissures. It is also more severe in the year attended with heavy rainfall than in other years. The comparative freedom of places situated within the zone of fever, and having everything in commmon with other low lands except an elevated site and a dry soil, is also a significant fact. It may also be mentioned that malarious fever patients fare better and that relapses are less frequent, when they are kept on dry food such as wheaten bread, than when they live upon rice the staple food of Bengal, as, we are glad to acknowledge, was first shown by the Editor of this Journal. The daily ablutions, so refreshing, are often found to be prejudicial to malarious patients, and they have often to avoid a bath even at the expense of cleanliness, to prevent a relapse of fever.

HOMŒOPATHY OFTEN FALSELY ACCUSED.

By W. Younan, M.B., C.M. (Edin.)

About a month ago I was consulted by a young man for whom I had prescribed from time to time during the last three or four years. About four or five months before he had suffered from a sharp attack of ague and fever and was compelled to seek the advice of the doctor of the firm that employed him. The fever left under large doses of Quinine which was kept up for weeks after to insure against its return. The fever did not return, but the patient suffered from such a persistent malaise that he was quite unfit for work. Enquiring into the character of this original fever I pointed out to the patient that Quinine was an unsuitable drug in his case, that the large doses of it he had taken had not *cured* the fever but *suppressed* it—that the excessive malaise which resulted was an expression of the suppression—that as surely as the Quinine had suppressed the fever so surely would the homœopathic remedy bring it out in a greater or less degree. As he was a heavy smoker and not a very sensitive subject I gave him a dose of two globules of Arsenicum album 6 in sugar of milk and powder of sac lac to go on with for a week. I did not see him for a fortnight after as his work had taken him out of town. But he was so pleased to inform me that soon after the first dose of medicine the malaise began to improve, and, though *he felt feverish for days after*, by the end of a week he felt his old self again.

I asked him about another patient whom he had recommended to me and who had unaccountably discontinued treatment after being considerably benefitted by Homœopathy. "You know Doctor," said he, "the friends and relatives of that patient dissuaded him from homœopathic treatment on the assurance that homœopathic medicines, if they relieve or remove one diseased condition, invariably bring on another. Such a belief is much commoner than you think and I am ashamed to own that I entertained it myself. For instance, I have been seriously thinking that your homœopathic medicines have been responsible for a very marked decrease in my sexual powers, amounting almost to impotence—for I was a very strong man before and prided myself upon my strength." Such a speech, so definitely uttered, naturally took me by surprise and made me hesitate a little. But a little reflection was enough for me to assure my patient that homœopathic medicines were not blessings in disguise, and that the evil he complained of could easily be laid at the door of the allopathic doses of Quinine which had been previously administered to him. In the proving of Cinchona, from which Quinine is made, Hahnemann distinctly showed how that drug was able to weaken the sexual function in the healthy body and how, *in consequence,* it was able to remedy that weakness in the sick body. Accordingly I promised my patient that when I was able to entirely antidote all the Quinine he had taken, the trouble he complained of would disappear. I did not give him a second dose of Arsenic till a week later when he was complaining of a return of the malaise. The next time I saw him he brought me another patient for homœopathic treatment, and need I say he had quite changed his mind about the harmfulness of homœopathic medicines and was quite ready to quarrel with those who thought as he had done. "For," said he, "I am as strong again as I was *and even stronger.*"

EDITOR'S NOTES.

Influence of Changes in the Vagus on the Development of Pulmonary Tuberculosis.

G. Tria at the recent Tuberculosis Congress at Naples said that the abolition of the function of the vagi was followed by disturbance, permanent or transient, of the pulmonary innervation. Since 1893 it has been demonstrated that an increase of endopulmonary temperature follows division of one vagus. Dogs were used for the purpose. These animals possess a relative immunity in regard to tuberculosis, and cultures of tubercle bacillus in glycerinated agar were inoculated into the trachea, and sometimes into the jugular vein. In some experiments the result was negative, both in the dogs in whom the vagus had been divided and in the controls; the animals were killed after a time, and nothing was found *post-mortem*. From other experiments important results were obtained, and the author thinks himself in a position to affirm the receptivity in regard to tuberculous affection is considerably augmented in dogs in which one vagus has been divided. The pulmonary parenchyma in general shows less resistance to the action of the pathogenic germs. Tria recalled the observations of Grasset and Tessier that influenza had sometimes brought to light tuberculous lesions previously latent, and which might have remained so; these observations he was able to confirm from his own experience. He considered that the explanation of such facts was that influenza, which often seriously damages the nervous system, both central and peripheral, renders the organism, and particularly the lung, less resistant, and thus opens the way to pathogenic organisms.—*Brit. Med. Journ.*, May 26, 1900.

Professional Secrecy in the United States.

The Newhaven Medical Association has lately had the question of professional secrecy under consideration. It appears that in a recent trial in the Superior Court of the State of Connecticut, a medical practitioner of good standing was compelled to answer, against his protest, a question relating to knowledge obtained by him in a professional communication from his patient. The decision of the Court was based upon the common law rule at present governing such cases in the State. According to this law, while the confidential communications of a client to an attorney shall be considered as privileged, and shall not be disclosed as testimony in the Courts, the confidential communications of a patient to a medical practitioner, or of a penitent to a priest or other clergyman, shall not be deemed privileged, and must be divulged in the Courts as testimony. The State of New York some years ago passed a statute over-ruling the commn-law rule, and this statute has since been adopted, practically without change, by seventeen other American States and territories. The Code of Civil Procedure of the State of New York provides that "A person duly authorised to practise physic or surgery shall not be allowed to disclose any information which he acquired in attending a patient in a

professional capacity." The Newhaven Medical Association being of opinion that the discrimination against medical men and clergymen regarding confidential disclosures under the common-law rule is against the best interests of public policy and of society, urges that the rule of common law should be over-ruled by the enactment of a statute similar to that of New York State.—*Brit. Med. Journ.*, June 2, 1900.

Chronic Brass Poisoning.

The paper by Dr. Wm. Murray on chronic brass poisoning published at page 1334, is opportune. Not only is the medical profession bestowing greater attention on diseases of occupation, but the public and the Legislature are looking to it for instruction in regard to them. In working men there is often considerable difficulty in tracing symptoms to their proper cause, and in the present instance this is particularly the case, for the workpeople describe their occupation differently—for example, stampers, metal polishers, etc. The one important point, however, is that they all work in brass. The literature of brassfounders' ague has been scanty, but the labours of Arlidge Hogben, and Simon have made it easier for others to follow, and in vol. ii of Allbutt's *System of Medicine* many of the points discussed by Dr. Murray have been touched upon. It is interesting to observe how brass poisoning, like plumbism, hits young women and boys hardest. Anæmia, neuralgia, emaciation, dry throat, hacking cough, and hæmoptysis form a group of symptoms which, occuring in an artisan without any other explanation, should lead the practitioner to inquire into the work of the patient. The presence of a green line on the teeth, greenish-coloured perspiration, and hair dyed the same colour would suggest this form of metallic poisoning; but since brass is an alloy of copper and zinc, it is difficult to say which of these two is the culpable metal. Most authorities lean to copper, but Dr. Murray thinks zinc cannot be altogether excused. It seems on the whole probable that copper is the more poisonous of the two metals. The green line on the teeth is known to be a deposit of copper, while the dye of the perspiration and the elimination of copper by the skin suggest that this is the metal that is causing the symptoms. Milk, personal cleanliness, and well-ventilated workshops are regarded as prophylactics, and in Dr. Murray's experience phosphorus in small doses, or phosphoric acid, has given satisfactory results.—*Brit. Med. Journ.*, June 2, 1900.

Experimental Reproduction of Dental Caries.

M. J. Choquet has recently made some experiments on the propagation of dental caries by direct inoculation of healthy teeth with the carious microbe and the results of his observations were read before the Academy of Sciences in Paris at the meeting held on April 2nd. That dental caries is due to a micro-organism has been established by the labours of several investigators, but its reproduction by direct experiment has not as yet been demonstrated. From three stopped teeth, the stopping of which had remained intact for periods varying

from three to seven years, he succeeded in isolating five species of microbes. Of one of these he was able to obtain pure cultures. The characters it presents are that it is short, motile, ramifying when growing in extract of meat, and incapable of liquefying gelatin. It does not grow on or in gelose, potato, or serum. On gelatin-peptone it forms colonies only on the fifth or sixth day. These are oval in form, opaque, and whitish in colour. The growth is greatly favoured by the addition of 1 per cent. of glycero-phosphate of lime. It is a facultative anaerobe with disposition to develop more rapidly in vacuo. It causes glycerine, mannite, glucose, galactose, saccharose, lactose, maltose, dextrine, and inulin to ferment. It is without action on dulcite, erythrite, arabinose, and the nitrates. It does not peptonise albumin nor does it coagulate milk. It does not liquefy starch paste, neither does it form indol with peptone. M. Choquet having obtained a pure culture of the microbe made a small cavity on the labial side of the incisor of a sheep, not so deep, however, as to penetrate the pulp cavity. A small platinum cup, sterilised by fire and charged with the culture, was introduced into the cavity so that the culture was in contact with the dentine and the whole in the tooth was plugged. Nine months afterwards the tooth was examined. The bottom of the cavity was of yellowish colour, due to the dentine being softened by the action of the microbe. Cultures made from the carious portion of the tooth gave a bacillus of the same form as that which had been used in the experiment. The same results were obtained in two other cases.—*Lancet*, May 19, 1900.

The Clinical Thermometer as a Germ Carrier.

W. L. Conklin (*Buffalo Med. Journ.*, February) sounds a note of warning as to the danger of conveying infection by means of the thermometer. Assuming that the thermometer as well as the scalpel may be a germ carrier, does not the mouth furnish as favourable a medium for the development and growth of bacteria as the open wound? It has been asserted that the ordinary methods of cleaning a thermometer, such, for example, as holding it under the water tap, or wiping it with a damp cloth, are sufficient to rid it of bacteria. From careful measurements he estimates that a degree mark is wide enough to accommodate 100 tubercle bacilli, marching in single file, so to speak. Also that an area with the length and breadth of one of of these marks would furnish room for the lodgment of 280,000 tubercle bacilli. Believing that a clinical thermometer should at all times be sterile, he has for some months carried his thermometer in an ordinary rubber case, filled with a 1 to 500 or 1 to 250 bichloride solution. All that has been necessary to prevent leakage of the solution was a piece of leather packing, but there was gradual shrinkage in amount, as each time the thermometer was withdrawn from the case a small portion of the solution adhered to it, and he found it necessary on this account to renew the solution once in three or four days. It was his custom to rinse the thermometer in a glass of water or under the tap before and after using it. While experiment-

ing for the purpose of proving that a thermometer cleaned in the ordinary way was not necessarily sterille, he had at the same time sought for proof that a thermometer kept constantly immersed in a strong bichloride solution, as described above, was entirely free from micro-organisms. The results of bacteriological examination of six thermometers by Professor Dodge were as follows: Four had been washed but not sterilised. Micro-organisms of one or another variety were found on each of the four. Two had been washed, and then placed in a case containing bichloride solution. No micro-organisms were found on either. Conklin thinks these experiments furnish conclusive proof that the thermometer may be a germ carrier, if cleaned in the ordinary way; that by means of a very simple and inexpensive device it may be rendered sterile after each use.—*Brit., Med. Journ*, May, 26, 1900.

Cancer of the Stomach in the Young.

Dr. William Osler and Dr. Thomas McCrae have contributed to the *New York Medical Journal* of April 21st a valuable and exhaustive paper on this subject. A generation ago it was thought that cancer of the stomach could be left out of consideration in the diagnosis of obscure cases if the patient was under the age of 30 years. Unfortunately, this is not true. In 3257 recorded cases the percentage of patients under 30 years of age is 2·5. In a series of 150 cases observed at the medical department of the Johns Hopkins University six of the patients were under the age of 30 years—i.e., 4 per cent.—an unusually high proportion. In childhood the disease is a pathological curiosity; there are only six cases on record in patients under 10 years of age. Between the ages of 10 and 20 years cancer of the stomach is also very rare; only 13 cases have been recorded. Between the ages of 20 and 30 years cases are more numerous. In the six cases above mentioned two features stand out prominently—an abrupt onset and an acute course. There was no loss of appetite in three cases, anorexia was present in two, and in one the state of the appetite was not noted. Pain was absent in only one case; in the others it was fairly severe. Vomiting was present in five cases; it was absent in the case where pain was absent. In four cases the duration was known; it was six months in two and four months in two. The following is one of the cases cited by the writers of the article. A man, aged 25 years, who had previously been well and strong, was admitted to hospital complaining of weakness and debility. Eight weeks before admission his friends noticed that he looked yellow. Two weeks later he had a slight feverish attack which kept him in bed for some days. The temperature did not rise above 102° F. He then lost his appetite and became wasted. There were occasional belching of gas and a bad taste in the mouth, but no nausea or vomiting. In the two weeks before admission he lost nearly 15 pounds. His physician discovered a mass in the abdomen and the patient therefore came to hospital. There were moderate pallor, sallowness, and emaciation. Below the ensiform

cartilage was an elevation which descended with inspiration. The test-meal yielded 80 cubic centimetres of liquid which contained no hydrochloric acid and gave a reaction for lactic acid. Dr. Osler made this note: "The great mobility of the tumour with varying conditions of fulness and emptiness of the stomach seems very important. The anæmia, nausea, failure of stomach digestion, absence of free hydrochloric acid, and presence of lactic acid, in spite of the patient's age, point to cancer of the stomach." Exploratory laparotomy showed a firm mass near the pylorus of the size of an orange. Small nodules were felt on the posterior portion of the stomach. The patient recovered rapidly from the operation which seemed for a time to have a beneficial effect on the symptoms. He grew feebler and more emaciated, however, and died four months after the onset of symptoms.—*Lancet*, June, 2, 1900.

The Development of the Cranium.

A careful study of the development of the primordial cranium has recently been made by an Italian physician, Dr. Giuseppe Levi of Florence, and the results of his researches, published in the *Archiv für Mikroskopische Anatomie*, Band lv., p. 341, 1900, are contained in the following propositions. The first rudiments of the primordial cartilaginous cranium in man occur in the form of isolated groups of closely compressed connective-tissue cells in looser tissue than that which forms the membranous primordial cranium. There is a certain homology between these aggregations of cell groups and those of the future bone. There is no homology between these rudiments of the skull of man and those described in mammals as parachordals and trabeculæ. The rudiments in question, even after their conversion into cartilage, preserve their identity for some time by the possession of perichondrial layer. It is only just before the chondrocranium has attained its highest development that all the rudiments coalesce and then only does the chondrocranium form one continuous whole. The rudiments formed by connective tissue are not all formed coincidently; that of the occipital bone is the earliest, then follow those of the sphenoid and of the auditory capsules, and the last to appear is that of the ethmoid. The differentiation of the several rudiments does not progress with equal rapidity—as a general rule it advances with the greatest rapidity in the latest formed parts and presents in each case characteristic features; thus in the occipital region it takes place quickly and almost contemporaneously throughout its whole extent, whilst in other instances it commences at a definite spot by a kind of cartilaginous nucleus and spreads uniformly outwards. The enlargement of the rudiments is rapid at first but extremely slow afterwards. The development of the occipital region presents a great similarity to that of the vertebral column. In particular the histological features of the formation of cartilage are different from those of all other segments of the skull and are identical with those of the vertebral column. Moreover, there is one distinct rudiment of a vertebra—that is the occipital—which has a symmetrical origin, and further

forwards there are parts of an indeterminate number of vertebræ. The occipital region, like the vertebral column in the first stages of its development, is in connexion with the chorda, but as the cartilage develops it becomes distinct from the chorda. All this supports the statement made by Froriep that the occipital region represents the true spinal segment of the skull in man. The symmetrical rudiments of the body of the occipital vertebra become the condyles of the occipital, the unsegmented portion represents the portio basilaris, and the lateral portion of the arch of the occipital vertebra the processus jugularis. The form of the rudiments antecedent to the appearance of cartilage does not always correspond to that of the cartilage when fully formed since parts of the rudiments undergo absorption. The chief changes that occur, however, are those consequent on the remarkable alteration of position of the occipital and sphenoid rudiments. The floor of the sella Turcica is the only segment of the whole skull which preserves its original position throughout the process of development.—*Lancet*, June 9, 1900.

Loss of Memory and of Sense of Personal Identity.

Cases of this sort, though decidedly uncommon in occurrence, are of considerable medical and legal interest. The record of a specially interesting case is published in the *Philadelphia Medical Journal* (May 19th, 1900) and recalls the occurrence of a similar case recently at Cambridge where a young undergraduate disappeared from his quarters and was not heard of for several days till he was discovered staying at an inn in the country some distance from Cambridge. He seemed to have had no recollection of leaving his rooms in Cambridge or of any of the incidents subsequent to that event and until his arrival at the inn, except that he was feeling tired and fatigued and that his boots and clothes were wayworn and dusty. The undergraduate was a youth subject occasionally to epileptic fits at infrequent intervals, and it appears that after such a fit he lost his memory and his sense of personal identity and wandered about until he came to the inn where, wearied and worn out, he took lodgings. He had lost all recollection of his former life and condition and stayed in the inn for some days. Then a second fit occurred after which the memory of his former self returned and he was able to realise his position and find his way back to the University. The case reported in the *Philadelphia Medical Journal* is that of a law student, aged 19 years, living in New York, who suddenly lost his memory and sense of personal identity and found himself wandering in the streets of what he considered a strange city. He was so perplexed that he asked people in the street if they could tell him who he was and went to the libraries and hotels to search in the newspapers for stories of missing persons in order that he might get some clue to his identity. He lived at a hotel and after spending five days in fruitless wanderings and inquiries he finally entered a police station and inquired of the sergeant on duty whether he could inform him in what city he was and requested that search might be

made in the record of missing persons. When this was done it was found that there was a description closely tallying with the appearance. A detective was sent with the youth to the address given in the description, where the wanderer was received with great joy by his mother and sisters. To their great surprise, however, he thanked them very politely, but assured them that he did not know them or the place. The mother told the police that he was a somnambulist and had left home previously under similar conditions. In the youth's pocket there was found a diary in which he had entered the details of his daily experience since the time he left home and forgot who or where he was. "His physicians state that his attack of amnesia is gradually passing off, and that while he shows memory of other events in his past life any reference to himself seems to be the signal for another lapse of his memory." The import of cases such as the above is evident both from a medical and medico-legal standpoint, and it is interesting to note their affinities with such neuropathic conditions as epilepsy and somnambulism.—*Lancet*, June 9.

Pernicious Anæmia.

Frank Billings, of Chicago, showed charts to illustrate a report of cases of pernicious anæmia with special reference to the blood findings. In all 19 cases were reported, 11 in males and 8 in females. The average age of the patients was 46 years. No exciting cause could be determined except syphilis in 1 case. The lemon-yellow tint was constant, the body weight was preserved, cardio-vascular symptoms were common, the spleen was enlarged in 4 and the liver in 3 cases. The stools were negative in all cases except 1, and in that infusoria were present. The disease as a rule progressed rapidly. In 3 cases the hæmoglobin varied from 15 per cent. to 74 per cent.; the red blood corpuscles varied between 150,000 and 4,000,000; the colour index was above normal in 53 out of 66 examinations, sometimes it was low. The leucocytes were usually below the normal. The colour index diminished during the remission and increased during the exacerbation, as did the number of nucleated red corpuscles. Direct infusion of blood produced in 1 case very little effect. The myelocytes were most abundant when the patient was at the lowest ebb. The occurrence of megaloblasts were of importance in the diagnosis, and when the nucleus of the cells was irregular it indicated an increased degenerative change.—Richard C. Cabot, of Boston, read a paper on some of the conclusions reached after a study of 110 cases of pernicious anæmia. Of the 110 cases reported 57 were males and 53 were females. Of the cases occurring in the female subject 4 followed parturition, and in 1 of these in which a necropsy was had there was leucocytosis and diphtheritic endometritis. He had seen all the cases within seven years, and thought that the disease must be common in the neighbourhood of Boston. Many of the cases in the series were originally diagnosed as general tuberculosis. Hæmorrhage was probably a symptom and not a cause of the disease; it had been observed from the bowels, the nose, the gums, the stomach, and the ear.

The symptoms were constant; in certain cases they were very mild; there was a lack of relation between the severity of the blood lesions and the severity of the symptoms, and it was not the lack of the corpuscles only that caused the symptoms. Muscular weakness, dyspnœa, gastro-intestinal symptoms, such as vomiting and diarrhœa, were seen. The latter train of symptoms was often paroxysmal. This fact was evidence against the hypothesis that atrophy of the gastric tubules was a cause of the disease. Hæmic murmurs were always heard, and occasionally a true regurgitant murmur was to be made out. The liver was enlarged in 30 cases, the spleen was enlarged in 13 cases. There were hæmorrhages into the retina in 36 cases, and 15 eye grounds were normal. In 66⅔ per cent. of the cases fever between 99° and 100° F. was seen. The urine was normal in 53 cases. In other cases albumen with hyaline and granular casts were seen. The urine was usually pale. There were nervous symptoms in one-third of the cases; nervous lesions might occur without giving rise to symptoms. In 106 cases the red blood corpuscles were below 2,000,000, and in 4 they were above that figure. The leucocytes in 72 cases were below 5,000, in 38 cases they were above that figure. The hæmoglobin in 79 cases was high, and in 31 cases normal or low. The red cells were usually increased in size, and megaloblasts were found at some time in 107 of the cases. In the 3 cases in which they were not found the blood was examined only once. The percentage of lymphocytes was in reality normal, and the polymorphonuclear leucocytes were decreased. Myelocytes were present frequently. In the periods of remission of the disease the red corpuscles usually rose and the hæmoglobin fell, resulting in a condition that resembled chlorosis. The leucocytes also increased during this period, the additional number of cells being polymorpho-nuclears. The megaloblasts disappeared, normoblasts took their place to disappear in turn. The symptomatology and course of the disease, as well as the result of the blood examination, were not at all like those of secondary anæmia. In those cases in which latent carcinoma had been found the carcinoma was not necessarily the cause of the pernicious anæmia. No case recovered. In mild cases diarrhœa was common. Twenty cases were progressive; in 69 cases 1 or more remissions were seen, and 21 of the patients went to work. Remission might take place in from ten to fourteen days. In 76 cases the duration of the disease was from one to three years. Treatment was hopeless, arsenic and bone marrow had no effect, but in some cases laxative treatment seemed to have done some good.—*Brit. Med. Journ.*, June 2, 1900.

CLINICAL RECORD.

Foreign.

A CASE OF SPASMODIC ASTHMA CURED WITH MASSIVE DOSES OF *NUX VOMICA*.

By Samuel Hahnemann.

A young man, twenty years of age, the son of an oil manufacturer, thin and weakly, had been from his childhood subject to a spasmodic asthma, which used always to increase from the commencement of autumn until the depth of winter and gradually decline from that period until the mild weather in spring. Every year he had grown worse, and this autumn he hoped might be his last. Already (I saw him first at Michaelmas) the attack commenced more violently than the last year at this time. The probable issue was evident. Last year, and for years past, every fall of the barometer, every south-west, and more particularly north wind, every approaching fall of snow, every storm of wind, had brought on an asthmatical fit of hours and days in duration, when he not unfrequently passed the night with both hands grasping the table, exerting all his strength to draw the smallest quantity of breath, and every moment in dread of suffocation. The intervals between such fits were occupied by slighter attacks, brought on by a draught of air, the vapour from the heated oilcakes, dust, a cold room, or smoke. He told me of these symptoms with the utmost difficulty of utterance, elevating his shoulders to draw a scanty breath, and this at a season of the year when his condition was as yet pretty tolerable.

I could expect no good effects from a change of place. So I allowed him to remain in his father's house, exposed, as it was, to every wind, and all the inclemencies of the weather; I let him take his usual diet; I only advised that his fare should be, if anything, more nutritious than otherwise; I let him occupy the same sleeping apartment, and continue his work in the oil manufactory, and, as far as his strength allowed, engage in agricultural employments.

The first medicine I administered was ipecacuan, in the smallest doses; they produced no nausea, neither did doses of five grains; the latter quantity caused purgation and relaxation of the system. The submuriate of antimony and the sulphate of copper, in quarter of a grain doses, produced no better results. Both of these substances, as well as asarum root, each used singly, caused the same bad effects.

I shall refrain from stating what other medicines, celebrated in asthma, did *not* effect; and shall only mention, that squills and bark, each employed separately, did—what they often do—they increased the difficulty of breathing, and made the cough more frequent, shorter, and drier.

A medicine was required which could produce anxiety, and diminish the easy action of the bowels. The choice fell naturally on *nux vomica*. Four grains given twice daily removed gradually, but perceptibly, the constriction of the chest; he remained free from the spasmodic asthmatic attacks, even in the worst autumn weather—

even in winter, in all winds, all storms, all states of the barometer, all humidity of the atmosphere, during his now increased domestic, manufacturing, and travelling business, in the midst of the oil vapour, and that without any important change in his diet, or any in his place of abode. He had been in the habit, when there was but small prospect of cure, of rubbing his whole body every night with a woollen cloth. Although it did not seem to do any good, I did not let him discontinue it while taking the last medicine, as he had been so long accustomed to it.

He now slept comfortably at night, whereas formerly he had passed the whole night in an arm-chair, bent forwards, or leaning against the wall, and coughing without intermission. During this season, which had threatened to be so dangerous to him, he gained strength, agility, cheerfulness, and capacity of resisting inclement weather. It was only severe attacks of cold that could cause the slightest return of asthma, and these he speedily got rid of.

Besides this medicine, nothing at all was employed.

Should I, instead of adopting this treatment, have observed attentively all the meteoric changes, and scrupulously calculated their effects on his most susceptible frame? And had I been able to do this, could I have added weight to the diminished atmospheric pressure, supplied the loss of atmospherical electricity, maintained an equilibrium between day and night, dried up the moisture in the air, changed the north into the south wind, reined in the storms, and warded off the attraction of the moon? And had I been able to do all this, should I have better attained my object?

[The above case is to be found in Hahnemann's Essay—"Are the Obstacles to Certainty and Simplicity in Practical Medicine Insurmountable?"—published in *Hufeland's Journal der practischen Arzneykunde*, Vol. iv, Part iv, page 106, 1797, translated by Dr. Dudgeon and incorporated in the Volume called *Hahnemann's Lesser Writings*.

The case shows most conclusively on Hahnemann's own testimony that the so-called massive doses are not *always* the mischievous things as he, forgetting his own earlier experience, unconditionally taught in his later years. In cases where massive doses are not inappropriate, the use of infinitesimal doses must, to say the least, be unnecessary. We believe that in many cases massive doses are appropriate and therefore necessary. In such cases infinitesimal doses must not only be unnecessary but may be injurious. We suspect that we often retard recovery by the obstinate use of infinitesimal doses where we could expedite the cure by the use of larger doses. By massive and large doses we mean not only the mother tincture and the crude drug, but attenuations up to the 6th decimal. In our humble opinion Hahnemann's later teaching has seriously hindered the progress of homœopathy.—EDITOR, *Cal. J. Med.*]

SIX LYCOPODIUM CASES.

By Andrew M. Neatby, L.R.C.P. & S. Ed.

Case 1.

23rd April, 1896.—A baby aged nine months was brought to me with an eruption on her face. It was reported as beginning with a vesicle, which matured, discharged and formed a scab. The discharge was slight, except after scratching. The pruritus was considerable. The child was constipated, and was said to sleep fairly well at night, but not during the day. The scabs were scattered over the nose and centre of the face generally, and were of a dirty yellow colour. Lycopodium 30 *ter die.*

27th April.—*In statu quo.* Sulph. 3, gr. j n. and m. for 2 days. Then continue Lyc.

30th April.—Red areolæ round scabs. Continue Lyc.

4th May.—Red areolæ have disappeared. Rep.

7th May.—Slowly improving. Rep.

11th May.—Very great improvement. Continue.

14th May.—All scabs gone, only discoloured surface remaining. Continue.

21st May.—Discolouration diminishing. Continue.

Note.—The latest baby of this family has lately been under my care with very severe eczema of the head and face.

Case 2.

27th April, 1896.—Mrs. A. consulted me for pain after food, spreading over the chest. Appetite poor; bowels regular. She complained of considerable flatulence, which she could not dislodge, and of dull aching over both orbits, with a sensation as of a film before the eyes. Pain between shoulders—worse on eating meat; drowsiness after food; sleep refreshing. Lycopodium 3, gr. j n. and m.

30th April.—Somewhat better. Appetite improved; less pain and flatulence, also less headache. Continue.

4th May.—Improvement maintained. Rep.

7th May.—Dyspeptic symptoms completely disappeared. The patient now complained of some headache in the vertex and over the left eye. which speedily yielded to phos. 3.

Case 3.

27th April, 1896.—Mrs. B. complains of nausea after food, and of faintness both before and after. There is also pain in the stomach after food, spreading over the chest. Has been taking less meat in the hope of obtaining relief to dyspeptic symptoms, but the experiment has been unsuccessful. Flatulence rises. She complains of a nasty taste in her mouth on waking in the morning and after food. Drowsiness after food: appetite gone; bowels regular; often very restless at night. Her sleep is unrefreshing, and she wakes up with a headache starting at the back of the head and spreading to the front. Is about two months pregnant. Lycopodium 3, gr. j n. and m.

4th May.—Less nausea and faintness, but has had an attack of bilious vomiting. Improved appetite; less pain after food; has less of the disagreeable taste in her mouth, but is not quite free from it.

Is less drowsy by day and sleeps better at night; less morning headache. Repeat.

11th May.—Improvement continues. No faintness; less pain and headache. I gave the same remedy now in the 12th dilution night and morning, and by the 19th May the dyspeptic symptoms had disappeared.

CASE 4.

6th October, 1896.—Mrs. C., after exposure to wet, complained of constant nausea and flatulence. Severe cardialgia and oppression after food; faint feelings come on suddenly. There is a sharp pain in the forehead, with a stupid feeling; great loss of strength; rheumatic pains in the legs and hips by night; sleeps at night but is not refreshed; dreams excessively, especially about the events of the day; talks in her sleep. Lycopodium 3, gr.j n. and m.

9th October.—All dyspeptic symptoms are better, but has not yet got much appetite; still very weak. The headache is less, but the head still feels very muddled. The rheumatic pain is less, but has not gone. Her sleep refreshes her better and she is dreaming less. Rep.

14th October.—Improvement in dyspeptic symptoms is thoroughly well maintained. She has now scarcely any headache and is gaining strength. Her sleep is more refreshing and she dreams less. There is great improvement in the rheumatic pains. Sulph. 3, gr.j n. and m.

21st October.—Except for slight flatulence all dyspeptic symptoms have disappeared. Says she feels a different woman from what she did two or three weeks ago.

NOTE.—I may add that on a former occasion I had treated this patient for very severe headache, worse on exertion or stooping, better by lying down, and feeling as if a band were round the head and going down into the neck. She was menstruating after a three months' interval, and the period was accompanied by pain which she compared to labour pain (she is the mother of several children). The remedy employed was carbo veg. 200, and its use was followed by a speedy disappearance of the symptoms.

CASE 5.

In the spring of 1897 Mrs. D., aged 59, consulted me for pain from the left side, about the level of the waist, across the back to the right shoulder. She cannot lie on the left side. This has lasted about two years. The appetite is good; the bowels are confined; experiences difficulty in getting to sleep, but sleeps well when she does get to sleep; at times she dreams a good deal. Sudden attacks of severe pain in the top of the head which last for a few minutes; considerable flatulence; aching pains sacral and iliac regions. Menstruation ceased seven years ago. Her youngest child is twenty-two. Sulph. 12, pil. iij n. and m.; nux v. 12, pil. iij. *bas die.*

10th May, 1897.—The pain in the back is less; there is some improvement in her sleep, but the flatulence persists. Lycopodium 30, pil. iij. n. and m.

24th May.—The pain in the back is much better and the flatulence

is less. Has not felt so well for six or seven years in respect of strength and energy. Continue once a day.

CASE 6.

This case is one with which I had to deal through the post. The patient is a little boy. On the 19th February, 1900, his father wrote to me to say that he was feverish and very hot about the head, hands and mouth. His feet were cold, but to this he was generally subject, though at the time of writing it appeared more pronounced than ever. The appetite was lost. The boy's pulse was reported to be 136; tongue "very badly white-washed," and his general appearance that "of being thoroughly out of sorts." He cared nothing for his playthings, and did not wish to be taken out of bed. When up he would lie on the sofa, only desiring to be left quiet. He did not complain of any specific pain, but had stated some days previously that his food, particularly fluid, was "pressing on him." His breath smelt sour and nasty. He had several doses of Dinneford's Fluid Magnesia, but without any improvement in his condition being effected. Bowels were open. He had been out playing in the snow. He has usually good spirits and is very merry.

A second letter was sent on the same day to say that there was a swelling in front of the left ear, presumed to be mumps; this swelling, however, never developed, and soon disappeared entirely.

I received this letter on the 19th, and immediately despatched by post Lycopodium 30, with instructions to administer three pilules every three hours. I may say that the patient's residence is considerably over 200 miles from London, and that the nearest homœopathic chemist (so far as I am aware) is some seventy miles away. In spite of the delay, therefore, there appeared to be no better plan than posting the medicine.

21st February, 1900.—The child's father wrote to me again under this date. He reported some improvement: there was less fever, but the breath continued offensive and he showed but little improvement.

I wrote on the 22nd advising them to continue the remedy.

23rd February.—Under this date the father wrote again to say that the appetite was much improved, the breath better, and the patient almost entirely himself again.—*Monthly Homœopathic Review*, June, 1900.

SILICEA IN CARIES OF THE BONE.

By W. M. HILTON, M.D.

It seems that flint was first used as a medicine by Paracelsus; but its employment had become quite unknown when Hahnemann, encouraged by the success of introducing and triturating the otherwise inert metals, applied the process to it also, thereby giving us a most valuable remedy.

The genuine physiological action of *Silicea* is quite unknown, but experience has proven that its influence is upon the nutrition rather than the functional activity of the tissuses which come within its range of action; it is therefore suited to organic changes rather than to functional disorders. Its deep and slow action make it appropriate

to the chronic rather than acute diseases. The one especial property of *Silicea* is its power over suppuration. It does not act like *Mercury* in averting this process when threatening, and it is inferior to *Hepar sulphur* for promoting it when inevitable; but when it is established, and by its excess or long duration is causing mischief, the effect of small internal doses of *Silicea* in checking it is very remarkable.

It would take a long time to enumerate the conditions in which *Silicea* is useful, but that is not the purpose of this paper, but to speak of its efficacy in caries of the bone.

Dr. Von Grauvogl points out that the only chemical difference between cartilage and bone is that flint is present in the latter, but not in the former, and he gives a good case of enchondroma of the fingers in which, acting upon this suggestion, he administered *Silicea* 3x with most satisfactory results. We can speak no less confidently of the power of the drug, when, as in rachitis, the enchondromatous tendency is general. In scrofulous diseases manifesting themselves in the bones and joints, *Silicea* proves the remedy. In the scrofulous joints, it is probably most useful when the disease has begun in the bones rather than in the synovial membranes or cartilages.

Dr. Hempel, in his work on Materia Medica, says: "In caries and exfoliations of bones, long bones, bones of the face or skull or vertebræ, *Silicea* is an indispensable remedy, more particularly if the disorganization is complicated with mercurial action." He gives a case of enchondroma which was cured by *Silicea*, 6th attenuation. The patient was a poor boy of fourteen years, of very pale complexion. He says: "The patient showed me his right hand, after he had first removed the bandage which was of very little use to him. The metacarpal bones of the middle and ring fingers, the phalanges of the index and middle fingers and the thumb, had become transformed into oval, bulbous, hard masses, having a uniform surface, the articulations having become effaced and unrecognizable, and, consequently, immovable. In various places these parts had lost their integuments by ulceration; the rough surface of the bones could be distinctly felt by the probe, and parts of them could readily be broken into; other parts, on the contrary, were more resisting.

"The boy had no appetite; he was employed by a potter in carrying clay, and was unwilling to give up this work which secured him a scanty livelihood. He complained of nothing but acute pains in the affected parts, drowsiness in the daytime, a feeling of exhaustion and his spirits were very much depressed. According to the existing doctrines of physiological surgery, nothing could be done for this poor boy but to amputate the hand at the wrist joint. "Enchondroma is a pathological process by which the substances of bone is changed into cartilage; morphologically, as well as chemically, this cartilage is in perfect agreement with ordinary cartilaginous tissue. Now, it is well known that cartilage has all the constituents of bone except *Silicea*. In about one ounce of the bones of the adult there are found fifty-four grains of *Silicea*. Would it have been possible, under the circumstances, to administer *Silicea* as a nutrient remedy in the traditional quantities of the Old School? This being impossible, I

gave the boy *Silicea*, 6th attenuation, of which he took a dose every two hours, at the rate of five drops in the course of the day. In the course of eight days the condition had changed to such an extent that the superficial ulcers began to cicatrize and the bulbous formation had become considerably less in size. In another fortnight, the mobility of the joints had been restored to a very slight extent. At the termination of the next fortnight, all the accessory symptoms in this case had disappeared, the appetite was restored, the drowsiness had disappeared, the boy was in good spirits, enjoying the prospects of his final recovery. This was completed in eight weeks; since then five years have elapsed, and the boy continues to enjoy perfect health."

The following cases are from my own practice, and verify to some extent the one just mentioned, although, in these, there was no enchondroma present.

Case I. Mrs. R., age 35, tall and spare, had a discharging sore upon the inner side of the right tibia, about two and a half inches above the ankle joint, which would apparently heal, then in a week or two break out again. This had continued during a period of about two years, causing her a good deal of pain and inconvenience, the whole leg below the knee becoming very much swollen and at times inflamed. She had consulted several physicians and used a great many kinds of local applications, ointments, salves, etc. She called upon me for advice, and my diagnosis was caries of the bone, and I so informed her and also told her there were two methods by which she could be treated; the quicker method, a surgical operation, curetting and removing the diseased bone. The other, and slower way, by internal remedies. She decided to try the latter, and I gave her *Silicea*, 6th attenuation, four times a day, and within two months she brought me a piece of bone about an inch in length by a half at the wider end and pointed or sharp at the other. The sore quickly healed, and I kept her under observation for about five years, and there was no return of the trouble.

Case II. Mrs. W., age 42, a very large, stout woman, had a large discharging sore upon the inner side of the left femur, about three inches above the knee joint. The leg was badly swollen above and below the knee, and at times she was completely disabled by it. She had tried "all kinds of treatment" except homœopathic. My diagnosis was caries of the bone. I described to her the two kinds of treatment, surgical and medical, and as she chose the latter I prescribed accordingly *Silicea*, 6th attenuation. This had been troubling her more or less for two years and was gradually, but surely, growing worse. She took the medicine for a period of two and a half months, during which time several small pieces of bone were exfoliated, but no very large spiculæ were discharged as in the other case. The sore healed within three months entirely, and she has never had any return of the trouble, now more than ten years. No other remedies were given in either case than the *Silicea*. These cases came under my observation about ten years ago, and as I saw them at intervals

of a few months during the next five years following the treatment I have good reason to believe they were permanently cured.

One author or writer (Grauvogl, I think) says in regard to the manner in which *Silicea* acts: "This substance is undoubtedly conveyed to us in our food, but the organism loses the faculity of assimilating it. The functional power of the stomach and intestines, whose business it is to appropriate the *Silicea* contained in the food, becomes prostrated, for otherwise an enchondroma could not originate; it is the absence of *Silicea* which renders the formation of enchondroma possible. If the *Silicea* could no longer reach the tissues through the usual channel, we have to apply to anatomy and physiology for other localities where this agent may be brought in contact with the organism in such a manner that it can be transmitted to the tissues of which it constitutes a component part. Upon considering the anatomical channels through which molecular bodies are transmitted to the blood, we observe already upon the tongue the papillæ filliformes with their capillary processes turned inwards, which, by retaining substances very firmly within their walls, transmit them immediately to the cells. The mucous membrane of the mouth, pharynx and œsophagus very readily absorbs substances which do not surpass in size the orifices of the epithelium; whereas the mucous membrane of the stomach is almost exclusively of a glandular, secretory nature, so that its faculty of absorbing molecular bodies must be much less than that of the above-mentioned anatomical parts. The mucous membrane of the stomach is chiefly a repellant organ, by which means the food is kept within the cavity of the stomach until its adequate solution is effected by the gastric fluid. Only solutions whose density does not exceed that of water are able to penetrate and be received by the mucous coat, after which they are transmitted to the blood. Chemical mixtures, infusions, decoctions, at once excite a more copious secretion from this membrane, and we may rest assured that only very small portions of such liquids remain exempt from the destructive effects of the gastric fluids. This accounts partly for the fact that the enormous doses of the physiological school may still manifest medicinal power, and partly for the other fact that they must necessarily lead to the most disastrous consequences, as daily experience shows. Most physicians seem disposed to overlook the faculty inherent in the capillary processes of the papillæ of absorbing substances presented to them in an appropriate form and afterwards transmitting them to the cells."

I think we may conclude from the few facts stated above that, under the right conditions, we have a valuable remedy in *Silicea* in caries of the bones.—*Homœopathic Recorder*, May 15, 1900.

Gleanings from Contemporary Literature.

THE INCUBATION PERIOD OF PLAUGE.

By FRANK G. CLEMOW, M.D. Edin., D.P.H. Camb.,
British Delegate to the Ottoman Board of Health, Constantinople.

The term "incubation period" has frequently been employed in a somewhat vague and indefinite manner. If, as there is every reason to believe is the case, infective diseases are caused by specific organisms which gain access either to a mucous surface—as, for example, in cholera—or by penetrating the tissues—as in bubonic plague—the term "incubation period" should have a strictly limited significance. It should be held to cover that period which elapses between the time when the organism gains access to the surface or tissues and the onset of the symptoms of the disease. In this sense it is probable that the incubation period of most infective diseases is comparatively short. But the term in question has more often than not been employed as indicating the period between the mere exposure of the patient to infection and the onset of the disease. The difference between these two uses of the term is obvious. A person may be exposed to the infection of plague or any other disease, and he may carry away some of the infectious material with him, clinging to his clothes or to some article taken by him from the infected room or district, and days, weeks, or even months may pass before the infectious material gains access to his tissues. It is therefore quite possible that instances that have been regarded as examples of very long periods of incubation are not so in the proper sense of the term. It is only, in fact, at the other end of the scale—in those instances where the incubation period has appeared to be strikingly short—that anything like certainty is possible in attempting to measure its duration.

In regard to plague, there is one class of cases in which the incubation period can be accurately measured. I refer to those cases in which medical men or hospital attendants have been inoculated through wounds or abrasions at necropsies upon plague cadavers. In these cases it is important to remember that the mode of invasion of the virus differs essentially from that which occurs in the enormous majority of plague patients. There is in these cases a definite introduction into a fresh wound of (probably) a considerable quantity of virus which is (probably) accompanied in most instances both by the products of commencing decomposition and by extraneous micro-organisms of a particular class. In the mass of patients, on the other hand, who contract plague in the ordinary manner, the amount of the virus received is (probably) very much smaller, the bacillus gains access to the body either by some old and minute or even invisible abrasion or through the respiratory or alimentary tract, and if it is accompanied by other micro-organisms these are (probably) different from those in the other class of cases. This difference between the two

modes of invasion is obvious, and it appears to be associated with a difference in the length of the period of incubation.

In cases of plague contracted through a wound or abrasion becoming infected during a necropsy on a plague cadaver the incubation period is almost invariably two days, rarely three, and perhaps never longer. A considerable number of cases of this nature have now been recorded and almost all agree in the onset of symptoms being upon the second or at latest the third day after the reception of the virus.

The following example came under my own observation in the Parel (Old Government House) Hospital, Bombay. A hospital assistant took part in the performance of a post-mortem examination, on March 14th, 1898, at 3 P.M., on the body of a patient who had died from pneumonic plague 13 hours before. During the examination he pricked one of the fingers of his left hand. He began to feel ill on the evening of March 16th and died on the 20th from acute bubonic plague with a supra-trochlear bubo and later an axillary bubo. Here the incubation period slightly exceeded two days.

Major C. R. M. Green, I.M.S., has recorded the following instances: "A medical officer made a post-mortem examination on a plague case in Madras one hour after death on Oct 7th. He was assisted by a native who pricked his finger in sewing up the body. The medical officer felt ill on Oct. 9th, was very ill on Oct 10th, temperature being 103° and continued so until the night of Oct. 16th when the temperature became normal and he convalesced. The native who pricked his finger absented himself from work on Oct. 10th and died on Oct. 15th. The autopsy showed that he died of plague." Here the incubation period was apparently two days in the case of the (European?) medical officer; and uncertain, but less than three days, in that of the native assistant. The same observer has recorded the following case. A *dome* assisted at the post-mortem examination on a patient who died from plague on June 3rd. He was reported to be very ill on June 8th, and was then said to have been ill for two days. If the necropsy was made on the 3rd the incubation period was apparently in this case of three days' duration. Some doubt, however, exists about this case. The man was at first stated to have cut his finger at the post-mortem examination, but on examining his hands a small nearly healed cut was found on the right thumb and no wound or abrasion on the left upper extremity, while it was on the left side that the (axillary) bubo was present. Mr. J. Nield Cook has recorded a similar case in which a *dome* scratched himself on a point of bone at a necropsy, and plague developed two days later.

Captain S. E. Prall, I.M.S., has published a case in which a native Christian wounded his right index finger on May 19th, and developed plague on the 21st. The original wound, a quarter of an inch length, healed rapidly and was not to be seen on the 21st. Here the incubation period was of two days' duration.

In the case of Dr. Sticker of the German Plague Commission, who suf-

ered from an attack of plague contracted in this manner, the duration of the incubation period was also stated to have been two days.

It would appear exceedingly probable that in many of these and similar instances the infection has been a mixed one, other organisms and the products of commencing decomposition being received into the tissues in addition to the plague organism, and that this hastens the onset of symptoms.

Two cases, at least, have been recorded which are somewhat analogous to the above in that, though the virus was not received into the patients' tissues at a post-mortem examination, the exact moment at which the virus did enter the patients' tissues could be determined, at all events approximately. The first case of this kind came under my own observation. The patient was one of the English nurses sent to Bombay by the Secretary of State. A patient coughed in the nurse's face on Feb. 15th, 1898, and a portion of the sputum entered the conjunctival sac of one eye. The eye smarted and felt sore until the 18th, when there were feverishness and tenderness below the ear on the side of the affected eye, and the patient died from plague on the 22nd. Here the incubation period was apparently three days. The second case of the kind was recorded in Hong Kong: The patient was, as in the last case, an English nursing sister. The incident which led to her contracting the disease is described as follows. "One of the patients in his delirium coughed in her face on April 20th. She became ill on April 25th and it was soon found that she was suffering from pneumonic plague." In this instance the incubation period was apparently five days. The case is one of great interest when taken in conjunction with the one just described. In that, it will be observed, the infection was, there is every reason to believe, introduced through the conjunctiva. (It is the only instance which I have met with in which the disease was contracted in this manner.) The incubation period was, as already stated, three days. In the second case, on the other hand, the virus was, there is equal reason to believe, inhaled or it entered the tissues by way of the mucous membrane of the mouth or nose or upper respiratory passages, and in this case the incubation period was five days. It is impossible, of course, to form any general conclusion from single instances, but these two cases, as they stand appear to suggest that when the virus enters the tissues by the conjunctiva the incubation period may be considerably shorter than when it enters by the lung or by the mucous membrane of the nose, mouth, or upper respiratory passages.

The modes of contracting plague hitherto mentioned are, it need scarcely be pointed out, of rare occurrence, and it is of more importance to ascertain the duration of the incubation period in those instances where the disease is contracted in one of the more frequent modes. What those various modes are need not be discussed here. The evidence hitherto published points to the possibility of very great variations in the duration of the incubation period. It will be convenient to take some instances of a short incubation period first, to follow these by some general evidence of

the average period of incubation, and to conclude with a brief discussion of some examples where the incubation period has apparently been of remarkable length.

In two recorded instances the incubation period has appeared to be of not more than 24 hours' duration. The first case was that of a woman who after a prolonged stay in a plague-free village, visited an infected town and sickened with plague on the following day.

Another recent example of a remarkably short incubation period was observed in a village in Mongolia where plague has been endemic for the last nine or ten years. A labourer from this village had been absent for eight days; he returned to his house one afternoon; a person was lying ill suffering from plague in this house. He developed symptoms of plague on the following day within 18 or 20 hours of his return to the house. It is just possible that this man had contracted the infection before leaving the village eight days previously, but the published account of the incident does not state whether he had been exposed to infection before leaving the village, while he certainly was so exposed on his return.

A third example of a short incubation period is recorded in the report of the Bombay Plague Research Committee. The patient was a fireman on board the s.s. *Hydaspes*, which arrived at Bombay from Shanghai (a plague-free port) on Jan. 7th, 1897, and entered dock on the same evening. He did not complain of illness during the voyage to Bombay. Probably on the evening of the 7th, and certainly on the morning of the 8th, he visited the city where plague was prevalent. On the morning of the 9th symptoms of plague developed. Here the incubation period was almost certainly not more than 36 hours. The possibility of the infection having been brought in some unexplained way from one of the plague centres in China to Shanghai, and thence carried by the patient to Bombay, only to develop after his arrival there is so remote that it may be practically ignored.

In most places the average duration of the incubation period of plague has been believed to be from two or three, to five, six, or seven days or even longer. In Bombay, in 1896-97, it was believed to have varied between four and six days, but to have been sometimes shorter and sometimes longer. It is rare in ordinary plague hospital practice in India to be able to determine even approximately the length of the incubation period, for reasons which are too obvious to require explanation; but in one case admitted to the Mody Khana in Bombay the period could, it was stated, be determined as not exceeding three days. This patient arrived in Bombay from Calcutta (where plague was not then present) by sea, on April 6th, 1897, and he stated that his symptoms developed three days after landing. Dr. T. S. Weir, the health officer of Bombay, has also observed cases in which the incubation period seemed to be less than two days in length.

In Hong-Kong the incubation period was thought to have been usually from three to six days. In the case of three European soldiers who were attacked by the disease in Hong-Kong in 1894 the fever developed respec-

tively three and a half, four, and six and a half days after clearing out some infected houses. In the case of another soldier the incubation period was four days. The proof, however, in these cases does not appear to be absolutely conclusive that the infection was contracted on the particular day in question, and not either before or after. Other observers of the same epidemic estimated the incubation period as varying between four and six days and between two and seven days respectively. In Formosa, in the autumn of 1897, the incubation period was reckoned at from four to five days. In Mauritius the incubation period is stated to have never exceeded five days. In Alexandria the case has been published of a hospital assistant, who is said to have washed the body of a septicæmic plague patient on May 29th, 1899 and to have developed plague five and a half days later. Here, however, further details are required to prove that the infection was contracted from this particular source and not from some other.

The following are some examples where the incubation period has appeared to be unusally prolonged. Surgeon-General R. Harvey, I.M.S., has recorded the cases of two stable-boys in his employ. One was attacked with plague and was at once removed to a separate tent; the other boy (who had slept wtth this one) and all the remaining servants were kept under observation. The second boy developed plague eight days later.

Leumann has recorded three cases in which, he states the incubation period was definitely ascertained to be 17, 19, and 20 days respectively. "Each of these cases," he adds, "came under my own observation; was kept aloof from all sources of contagion or infection during the times specified, in a camp where the examining hospital assistant had to reside day and night; could not have been infected by me as I had no occasion to examine any of them until reported to me as suffering from a disease suspiciously like plague, and they undoubtedly developed plague. I have also heard of similar experiences from other medical officers on plague duty in the Bombay Presidency." In these instances, however, the term "incubation period" is clearly employed as covering the period between the time of exposure to infection and the onset of the disease, and not the period between the reception of the bacillus into the tissues and the onset of the disease.

In 1896 a chinese laundryman died at the Kennedy Town Plague Hospital in Hong-Kong. His only known exposure to infection had been 11 days prior to the commencement of his attack. In this case also, as the man was empoyed in washing clothes, it is just possible that he may have contracted the disease from some infected clothes and that the incubation period was, therefore, shorter than it appeared. In another instance in the same epidemic "a Chinaman in the gaol at Hong-Kong developed plague after being nine days under lock and key. From June 11th until June 20th he was apparently well, but on the evening of the 20th he became feverish and developed plague. ..... Dr. Lowson, however, states that the man complained of being ill for two days before being placed on the sick-list, thus reducing the period to seven days, and although the man was put in the cells on the 11th it was not until the 12th that he was really beyond contact with the outer world."

A large number of analogous cases of plague developing in prisoners after much more prolonged separation from the outside world have been observed in Bombay. A smart outbreak of plague occurred, it will be remembered, in the Byculla House of Correction late in 1896. In 1898 I had two patients in my wards at Parel who had developed plague in the common gaol in Bombay. One of them had been in prison for six months before the onset of the attack. In a similar case in Karachi the patient had been in prison for five months before he developed plague. In all such cases the most probable explanation is that the infection has been conveyed to the prisoners in some way by means of rats, these animals being known to be common enough in many gaols.

In like manner in the very numerous instances in which plague has developed on board ship or in a distant port at long intervals after the ship has left an infected port, it is impossible to regard them as instances of excessively prolonged incubation period, and their explanation is most probably to be found in the preservation of the plague virus in clothes or other fomites before it gains access to the tissues of the patients.

From the facts and considerations here brought together it may, then, be asserted that when plague is contracted through a wound or abrasion received during a necropsy on a plague cadaver or through the conjunctiva, the incubation period is usually from two or three days and is probably somewhat shorter than when contracted in the more usual manner. When contracted in the ordinary manner interval between exposure to infection and the onset of symptoms is usually from two to seven days, but it may be as short as 24 hours, and it may be extended in rare cases to a period of several weeks. In the vast mass of cases it is impossible to know at what moment the virus actually enters the tissues of the patient, but it is reasonable to believe that in those cases where the interval between apparent exposure to infection and the onset of symptoms has been very long the virus has for a considerable portion of the period been preserved in fomites outside the body of the patient.

For practical purposes it has been generally agreed to regard the maximum incubation period of plague as 10 or 12 days. The compiler of the Government of India Report upon Plague in India in 1896-97 has recorded the belief "that there has not been a single authenticated instance in the present epidemic of a period of incubation of more than 10 days." 12 days have been accepted as the maximum period by the framers of the Venice Convention. Plague, it is true, has in some instances developed on a vessel, at sea or in port, considerably more than 12 days after leaving an infected port; but these cases have been exceptional. In some of these instances the disease has developed three, four, and even six or more weeks after the ship has left the infected port. It is probable that these cases are to be explained in the manner suggested above; and it is certain that any attempt to extend the conception of the incubation period for quarantine or observation purposes so as to include all possible cases of this kind would be fore-doomed to failure.—*Lancet*, May, 26, 1900.

MONOGAMY IN ITS RELATION TO LONGEVITY AND THE DISEASES OF LATE LIFE.

By HARRY CAMPBELL, M.D., B.S., F.R.C.P. Lond.,
Physician to the North West London Hospital and to the West-end Hospital for diseases of the nervous system.

The increase in the death-rate from cancer has of late attracted, and rightly attracted, the attention of medical men, and various opinions have been advanced to account for it. One reason doubtless is that owing to the increased average length of life more people live into the cancerous age now than formerly. Some hold this to be the entire explanation and doubt if there has been any increase in the individual tendency to the disease. I believe, however, that I can see one reason why the individual tendency should increase, and though the suggestion I have to offer may at first sight appear chimerical I yet hope to advance a convincing argument in its support. My contention is that monogamy tends to favour the increase in our race of all late-life diseases, cancer among others, and to shorten the vital span.

Intent on his microscope and test-tubes the pathologist is all too prone to overlook first principles. I have long wondered at his indifference to some of the grand truths of biology at his failure to realise, for instance, that in order to maintain a high standard of racial efficiency there must be a ceaseless and rigorous elimination of the unfit. The belief that we can rear a healthy race by a perfect system of sanitation. and by that alone, is one of the most grievous fallacies of our time. Sanitation is doing much, and will do more, but it will never by itself secure a supremely healthy race. This end can only be attained by a vigilant weeding-out of the unfit. We are seeking, but shall ever seek in vain, to elude the inexorable law.

No species is, or ever can be, stereotyped. No two organisms are born exactly alike. Taking all the children of a family, and striking their mean standard of fitness, we find that some surpass, while others fall short of, this standard, and it is quite impossible to prevent racial deterioration unless those who fall *far* short are eliminated. I here refer to general fitness, but my proposition applies to each and every character of the individual. To take an example. A high *racial* (I use this term as distinguished from *individual*) excellence in respect of visual accommodation can only be maintained by a stringent elimination of those displaying errors of refraction. In civilised communities such are not eliminated, and consequently the race is deteriorating in respect of eyesight. In this instance the defect is remediable and the loss is in the main an æsthetic one, but countless other instances could be mentioned in which defective elimination is lowering the efficiency of our race, and in consequence we have among us a vast multitude of the unfit. As a physician I am seeing every day of my life people whom I am compelled to class among nature's failures—people who fall short of the standard which makes life worth living, people who in virtue of their unfitness suffer more than they enjoy. When,

therefore, I see, and share in, the vain struggle to patch up such failures and when I read elaborate systems on treatment I ask myself: Why not look facts sternly in the face and strike at the root of the evil by conforming to the supreme and inexorable law? I am convinced that some day this will be done, and that the wilful begetting of inefficient humans will be looked upon as scarcely less serious than the destruction of those already launched into being.

I make these observations because it is needful for my argument to insist upon the importance of this factor of elimination in keeping down the tendency to disease. In my work on "The Causation of Disease" I lay it down as an axiom that all non-accidental deaths occurring before the end of reproductive life are, racially considered, deaths of the unfit, such deaths acting beneficially on the race by limiting the production of unfit offspring. If the unfit individual dies before the procreative period he can leave no offspring whatever to inherit his unfitness; if he dies during this period he has an opportunity, increasing with every year of survival, of leaving unfit offspring; while if he dies after the procreative period he has had the opportunity of leaving his full complement of such offspring. Hence so far as the racial effect of death from unfitness is concerned, it is greatest when it occurs before the reproductive period, becomes less as it occurs later and later in this period, and ceases altogether when it takes place after it. The purifying action of elimination varying thus at different ages, we find the tendency to grave disorder is least before procreative life, steadily increases during it, and rises enormously at its termination. Inasmuch as post-procreative life comes not at all under the corrective influence of elimination I should expect to find the organism manifesting many defects directly this period is entered upon. I should, indeed, be prepared to find, not only an enormous increase in the tendency to disease at this time, but *a tendency for all organisms, vegetable as well as animal, to die soon after* the cessation of reproductive life. How far this conclusion is borne out by observation I know not, but I believe it is true of man.

This line of thought renders it important to determine the average limit of the procreative period in man. The most vigorous specimens of the human male certainly retain procreative power beyond the alloted age of the Psalmist; and we owe it, I believe, to this very circumstance that many of us are able to reach or even live beyond this limit. Had no man during the last 100,000 years got offspring after the age of 50, we should all probably tend to die of old age about this time. There has, however, been no such limit to reproduction. In primitive communities, e.g., the man who by his great physical superiority becomes the warrior-chief or king may continue to get children until well on in years, and may thus leave many more children than the average man. Now children thus got, female as well as male, tend by the law of heredity to live as long as their father, to resist deadly disease as long as he. It is true that children got by fathers who procreate into old age must have always formed a small proportion of the total number of children born. Nevertheless, they have,

I contend, exercised a leavening influence on the race, an influence [which has been at work from the time of the apelike man. The ability to live into the sixties and seventies, or even longer, we owe to the vigorous man of fine physique who retains his procreative power into advanced life. The woman, on the other hand, has played no part in the evolution of this power: her ability to live beyond 40 or 45 has no racial influence, since it does not increase her opportunity of leaving offspring to inherit it.

Now in civilised communities the tendency, observed in the more primitive ones, for the man who lives to a vigorous old age to leave more children than the average man is not great. The majority of men among the civilized have children by one wife only, and she is generally about the same age as the husband. The effect of this is to reduce the age-limit of reproduction in the man to that of the woman. A man, therefore, marrying a woman about his own age, and possessing the power of propagation into advanced life, leaves no more children to inherit his superior death-resisting powers than the inferior man who dies at 45. Monogamy in such a case reduces the superior man to the reproductive level of the inferior man, and robs the race of a number of individuals whose birth would diminish the racial tendency to disease in the later years and increase the racial span of life. The effect of monogamy, in fact, is to increase the racial tendency to disease after middle life and to shorten the vital span.

Among the diseases one would expect to be increased by the monogamous limitation of procreative life is carcinoma. Reckoning for the sake of argument 40 years (which is, indeed, below the mark) as the average age-limit to procreation among monogamous people, we must regard carcinoma as essentially a disease of post-procreative life and one on which elimination has little or no racial effect. Before the individual with a tendency to this disease develops it he has had abundant opportunity of leaving children to inherit the morbid tendency. Nothing hinders his contribution to the species being as great as that of the individual possessing the minimum tendency to malignant disease. Thus monogamy tends to increase the percentage of cancerously disposed individuals.

While, however, monogamy is thus exercising an injurious influence on our race, polygamy is a sociological impossibility, and happily we have at our disposal a much more efficacious means than is afforded by it of securing to the fittest the largest number of offspring—of giving full play to that searching process of elimination which alone can sustain a high level of racial fitness. Nature's method of elimination is a merciless one; she unceremoniously sacrifices the individual for the benefit of the race—so careful of the type is she, so careless of the single life. The sole object of individual elimination, racially considered, is to prevent the unfit individual from leaving offspring to inherit his unfitness, and Nature in her rough-and-ready way achieves this object by simply wiping him out of existence. The same end can be attained, however, by the unfit abstaining from getting unfit offspring and choosing to join the everincreasing army of the non-marrying. Elimination from the racial standpoint means not having offspring, and all who do not leave offspring are racially eliminated—unrepresented in posterity.

The best way, therefore—indeed, the only way—effectually to raise the racial standard is for the unfit to submit to voluntary elimination and to abstain from getting unfit variations. Not only would it be possible in this way to diminish the tendency to cancer and a host of other fell diseases but it would also be possible, though some may think it undesirable, to extend the span of life almost indefinitely. I have elsewhere shown that a man does not grow old, as is so often assumed, by wearing out, like his boots. If such were the case he would begin to wear out from the very beginning of his existence, whereas it is precisely in the years of develop-

mental life when most energy is expended that there is least evidence of wearing out, the organism, on the contrary, steadily advancing in efficiency. The period of senility is as much a part of the physiological vital cycle as that of development itself.

I would observe, in conclusion, that I do not advocate any startling measures of reform. The change I have hinted at can only come gradually but come it must, and who fitter than ourselves to help on the consummation?—*Lancet*, June 9, 1900.

PSYCHO-THERAPEUTICS.

By J. R. Greenway, M.D., M.S. Aberd.. Tunbridge Wells.

It is only of late that the subject of Psycho-Therapeutics, or the psychological treatment of various morbid conditions or disease by the well-studied influence of mind upon mind, has assumed that consideration and importance it now claims and seems destined to secure.

The studies and views thereon of Liebault and Bernheim of the Nancy School, and of Charcot at Saltpetriére in France have been much advanced upon by the great attention and development of the subject in America, as well as by the successful results from such treatment of disease; though so far it would seem to have been studied by very few in this country, or at least with the view of its more general practice.

To some extent or in some feeble way the principle involved in such study and treatment would appear to have been crudely grasped by sensational and so-called Miracle workers in the past, and even to have been fore-shadowed in the claims of Ancient Philosophy and Occult Science.

It cannot be viewed in the light of a specific for all kinds of disease, but it seems capable of such wide application that it is difficult to draw the line of its limitation; for it often gains its victories over the failure of drugs in relief and cure.

The class of diseases or perverted conditions to which it seems especially applicable or is more prominently beneficial afford large scope for its beneficent influence and power, even under the more restrictive term of "Suggestive Therapeutics;" for some experts consider that the benefit derived from such treatment rests in the power of Suggestion controlling or influencing the mind of the patient prepared to receive it, when in a state buoyant with expectant hope and firm faith of relief and cure.

It may here be explained that co-operation of the patient in the thought and wish for relief and cure seems as essential in attaining the desired result as his or her faith in the treatment adopted.

In order to fully grasp the principles of such treatment, it must be borne in mind that "ideas or thoughts are realities or states of being" to the individual, as that of pain, for instance, and if the ideas are those of suffering, and can be placed in abeyance by the brighter influence of another or stronger mind, giving correcting and health-inspring suggestions, the morbid ideas and feelings of the sufferer are allayed and overruled for good and relief, the healthy powers of the mind and nervous system again come into their normal play, and so rule and control the thoughts, bodily functions, and feelings; so that long trying pains, disorders, and disturbances, fear and nervousness, give place to restored confidence and health; healing power triumphs over despair and suffering, relief and cure being the result—or, in other words, the morbid and depressing ideas of pain, feebleness, or suffering are replaced by those of cheerfulness and well-being, with lasting effect.

In a previous article reference was made to various avoidable morbid or perverted conditions, which from the widespread slavery in the present

day to the abuse of drugs, alcoholic drinks, and loudly advertised nostrums, have a wide power in the development of various morbid acquired habits, as *Morphinism, Alcoholism, Cocainism, Bromidism*, and the Liquor, Tobacco, Opium, and Chloral habits, &c., which often result in a sadly deteriorating and destructive influence on Individual, Social, and National life; for which conditions drugs offer little or only temporary relief with little prospect of cure.

In such cases the principles of Psycho-Therapeutics, wisely adapted to the merits of the case, is the treatment *par excellence*, and affords in numerous instances most gratifying results and cures. The long habituated drug or liquor must of course be withheld, though in some instances, according to the constitutional condition, is best to be gradually lessened, suitable medicines may be temporarily given if called for, but in general only the occasional helpful dose seems necessary beyond proper Dietary regulations, Hygienic attention, and Sanitary surroundings, cheerful associations and health-inspiring influence; while the patient's powers of resistance are built up by special mental training and being impressed and taught how to keep cured.

But the benefit to be derived from this system of treatment is not limited to the above class of sufferers, for it shows marvellous power for good in various mental troubles and nervous disturbances, morbid habits of thought, in Insomnia, and various painful conditions, in those of enfeebled power or partial paralysis, in impaired energy; and various Neuroses or conditions of Neurasthenia have yielded to such treatment.

The widespread slavery to powerful drugs and nostrums so common in the present day, and the enervating results thereof, come under its power, and the Dipsomaniac, the Neurotic, and chronic sufferer have especial cause to be thankful for it, as before referred to.

It may be necessary to induce slight or deep hypnosis before giving the influence or suggestion requisite and then suitably adapted according to the aspects and needs of each case, but some experts do not consider such preliminary desirable in many instances. Pains of long standing, undesirable habits in children, unwillingness to study or learn, fretfulness, bad temper, late rising, night terrors, stammering, &c., are also cured by such benign influence.

Its Anæsthetic effect is also remarkable, as under it teeth can be extracted without pain; and the usual pains of Parturition seem to be wonderfully allayed and controlled thereby, and the stages of the event proceed otherwise naturally and more quickly, while the composure of the patient and her cheerful confidence are maintained, and her recovery most satisfactory.

Yet another important aspect has to be explained of such Psychological treatment; it leaves no ill-effects afterwards, but often tends to a brightening or freshening up of the mental as well as strengthening the physical powers.

We should never look at the mental and physical man as capable of being driven apart or in tandem fashion, but to work harmoniously as a properly matched and well-agreeing pair; which is the aim of Psycho-therapy, the result being Health and Happiness; nor regard disease always as something in itself to be expelled from the human system; but that the inherent "Vital Force" should be conserved or called forth to resist it by all the possible resources of art and mental influence, and neural tone upheld.

There is no perfect system of Medicine, which is a progessive Art and is best represented by Eclectic knowledge with the fruits of experience; for drugs can only play a partial part in the cure of disease.

Some with mental powers of marked ability are linked with a physical organism of feebleness or burdenable tendencies, but have cultivated their

mind to full control, and have done work of which they and the world may well be proud; so in psychological therapeutics and influence; the mind is led to a higher plane of thought, will, and life above and overruling the pains and infirmities which have long held sway.

The limit of such influence seems indefinable, but sufficient has been stated to show some extent of its merits. It has been long in developing to its present position and claims; but has come to stay and to progress, to strengthen and extend the power and benefits of the Science and Art of Healing among the peoples of the world.

Another important bearing of the subject is the beneficial influence of suitably adapted thought and Auto-Suggestion in self-culture and self-control, in the mastery of undesirable habits and tendencies or want of confidence, also in self treatment for the relief of pain, chronic disorders, and Insomnia, and the personal upbuilding and restoration of health.—*Homœopathic World*, June 1900.

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HAHNEMANN ON ANTIDOTES, WITH SOME CASES.

[The following short Essay was published in 1798 in Hufeland's *Journal of Practical Medicine,* under the title of *Antidotes to Some Heroic Vegetable Substances.* We give below the translation by Dr. Dudgeon, as it is found in the "Lesser Writings of Hahnemann" by that author. The Essay bears the impress of a master mind, showing its powers of observation and research, and its readiness to act at emergencies where life and death are concerned. It will, we doubt not, repay perusal even at this date, after over a hundred years of its publication.—EDITOR.]

CASES of poisoning often put the practitioner in great straits. It is necessary to administer the specific antidote without delay. But where are the particular antidotes to be met with ?

From the time of Nicander to the 16th century, when, if I mistake not, Paré first set his face against them, grand plans were formed by medical men for discovering nothing less than an universal specific for everything they called poison ; and they included under the denomination of poison even the plague, philtres, bewitchment, and the bites of venomous animals. This extravagant object they sought to obtain by equally extravagant mixtures, such as their mirthridate, theriac, diascordium, &c., and then again, there was a time when all these unimportant

compounds were thought to be surpassed by the powerless bezoar and the electuary of jewels. We know how ridiculous all these efforts were.

The more rational spirit of modern times did not, however, completely abandon this illusory idea of the possibility of an universal antidote* for all poisons. Among other things, it was sought for in vinegar. But in place of giving us a faithful detail of the cases in which it was truly useful and those in which it did no good, they endeavoured to persuade us that it was specific against every thing that bore the name of poison, and yet it is, *e.g.*, of no use in poisoning by opium, and of little or none in that by camphor.

Others saw in milk and fatty substances a supposed universal antidote for all kinds of poisons, but no good can be effected by them, except in cases where inflammatory and mechanically irritating substances have been swallowed.

Emetics seemed to be more generally useful in cases where poisons had been swallowed: but they are by no means so in all cases. They are only serviceable when the quantity of injurious matter, that has been swallowed and is evacuated, is considerable in amount. Besides their unadvisableness in cases of poisoning by arsenic, as I have elsewhere shown, the following cases will suffice to dispel the illusion of their being universal antidotes.

The efforts of our age to discover a peculiar antidote for each individual poison, or at least for particular classes of poisons, are not to be mistaken, and I give in my adhesion to them.

Powerful, heroic, medicinal substances, without which the medical art would be as completely paralysed as the mechanical arts without steel and fire, are apt to give rise to violent effects, even in very small excess of dose, in certain states of the body, as also in idiosyncratic or otherwise very irritable subjects, and these effects the physician must know how to remove in order that the cause he advocates may not suffer.

* There are at least four kinds of antidotes by means of which the hurtful substances may be—

I. *Removed:*
   1. By *evacuation* (vomiting, purging, excising the poisonous bite).
   2. By *enveloping* (giving suet for pieces of glass that have been swallowed).

II. *Altered:*
   1. *Chemically* (liver of sulphur for corrosive sublimate).
   2. *Dynamically* (*i. e.* their potential influence on the living fibre removed) (Coffee for Opium).

Antidote to Camphor—Opium. Antidote to Opium—Camphor.

1. A girl, five years of age, had swallowed a quantity of *Camphor*, calculated at from eight to ten grains. About ten minutes afterwards she grew pale, became cold, her look fixed; then she became faint, speechless, and senseless. In a short time the head became drawn to the right shoulder, and remained in that position; the rest of the body was limp; the senses extinguished. Occasionally the arms were moved involuntarily. The eyes were turned upwards. There was foam at the mouth. The breathing was scarcely perceptible.

Placed in a warm bed, she occasionally seemed to recover herself a little. Strong coffee was given her; but thereupon the senselessness obviously increased. Violent vomiting set in, (the camphor was in part ejected) but no relief ensued therefrom. The death agony seemed to increase always more and more.

I poured four drops of tincture of opium into her mouth, but could not observe if they were swallowed, but as I imagined I perceived some signs of amendment after watching carefully for some minutes, I continued to ply her with opium by the mouth, and also (as much seemed to flow out of the mouth again, on account of the inactivity of the œsophagus) by clysters of water mixed with some drops of thebaic tincture.

As far as I could reckon, she might have taken by both methods nearly two grains of opium, (a quantity that under other circumstances would certainly have killed a child of that age) when she recovered perfectly without the employment of any other remedy.

A tranquil sleep of some hours, accompanied by general perspiration, restored all her former liveliness.

In this case it was remarkable how greatly the coffee increased the too powerful action of the Camphor.

In other cases I have observed that these substances taken soon after one another, or together, caused a great and rapid tendency to vomit, a circumstance that might perhaps be turned to account in practice.

The great specific power of opium in removing so speedily the dangerous effects of too large doses of camphor, seems to justify me in regarding *Camphor*, on the other hand, as one of the most powerful *antidotes of Opium*, as Halle also observed in some degree.

And if we examine the affair accurately did not the enormous dose of opium that I gave in the above case become innocuous in consequence of the camphor previously swallowed?

Camphor is known, from the observations of others, as an antidote to *Cantharides* and *squills*.

Antidote to Arnica—Vinegar.

2. A man of an irritable system, in the prime of his life and otherwise healthy, during the prevalence of the influenza in April of this year, took, for a headache of several days' duration, occasioned probably by this epidemic, six grains of arnica root, a dose that he deemed inconsiderable, as he had previously taken with the greatest benefit, for autumnal fevers, from 15 to 17 grains daily and even twice a day. After the lapse of about eight minutes, he was attacked by frightful palpitation of the heart, which at length became so violent that he could utter a few words with great difficulty. His look was staring and anxious. A general coldness pervaded his frame, and vertigo almost deprived him of hearing and sight. The open air seemed to revive him, but the effect was not lasting. He tried to promote vomiting, but the efforts to vomit only increased his stupefaction, his anxiety, and his vertigo. His lower jaw fell.

He was scarcely able to indicate his desire for *vinegar* (by this time three quarters of an hour had elapsed). Strong wine-vinegar was brought him, and he felt revived. He drank several ounces at once, but soon perceived that he experienced most relief when he did not drink a draught but only took a little every instant. In the course of half an hour after commencing to use the vinegar he was restored without further traces of these accidents.

If there be any remedy that we require to regulate carefully by the actual constitution of the subject whom we are treating, it is that tremendous irritant arnica, which may be given in the leucophlegmatic cachexies of children of ten years, especially in autumnal diseases and when the pulse is soft, in doses of twelve grains without the slightest bad results; and on the other hand in certain states of the body where there is already present a general and exalted irritability, eight grains of it in a dose will kill the strongest man in a few hours, as I have known to occur in some instances.

The pathognomomic discrimination of the cases, and when it is at hand, vinegar, will in future prevent such accidents.

Antidote to Cocculus Indicus—Camphor.

3. A druggist, of fine sensibility and otherwise healthy, although but recently convalescent from disease, some years ago wished to ascertain the taste of the Cocculus seeds and as he considered it a powerful substance he weighed out a single grain of it, but did not take quite the half of this into his mouth, rolled it about with his tongue over his palate, and he had not swallowed it two seconds when he was seized with the most dreadful apprehensiveness. His anxiety increased every moment, he became cold all over; his limbs became stiff, as if paralysed, with drawing pains in their bones and in the back. The symptoms increased from hour to hour, until, after the lapse of six hours, the anxiety, the stupefaction, the senseless stupidity, and the immobility had risen to the greatest height, with fixed sullen look, ice-cold sweat on the forehead and the hands, and great repugnance to all food and drink. At the slightest increase or decrease of the temperature of the air (75° Fahr.) he expressed his displeasure, every loud word put him in a passion. All that he could still say was that his brain felt as if constricted by a ligature, and that he expected speedy dissolution. He gave no indication of inclination to vomit, of thirst, or of any other want in the world. He wished to sleep, as he felt a great inclination to do so, but when he closed his eyes, he immediately started up again, so frightful, he asserted, was the sensation he felt in his brain on going to sleep, like the most hideous dream. The pulse was very small but its frequency was not altered.

In these frightful circumstances I was called in. A few drops of thebaic tincture appeared not to agree with him. This led me to fix upon a strong Camphor-emulsion, which I administered to him, a tablespoonful every minute. I soon observed a happy change in his expression, and after he had thus taken fifteen grains of camphor, his consciousness was restored, the anxiety gone, the heat natural—in something less than an hour. He perspired a little during the night, slept pretty well, but the following day he was still uncommonly weak, and all the parts which during the direct action of the cocculus were yesterday painful internally, were to-day uncommonly painful externally

to the slightest touch. The bowels remained constipated for several days. It is very probable that all these after sufferings could have been prevented, if in place of giving fifteen grains of camphor, I had given at once thirty.

During the increase of the symptoms from the cocculus, he attempted to smoke tobacco with considerable aggravation; they also increased from taking coffee, though not so strikingly as from the other.

Antidote to Gamboge (and other drastic gum-resins)—*Salt of Tartar.*

4. I saw a child of three years old take a tincture containing two grains of gamboge, prepared with dissolved salt of tartar, without the slightest sickness or evacuation, with the exception of an uncommonly profuse flow of urine.

Alkalies probably destroy the drastic property of other purgative gum-resins, especially if the latter are still present in the stomach, but not as in the other cases, I have adduced, dynamically, by an opposite influence upon the sensitive and irritable fibre, but chemically by decomposing the resin.

Antidote to Datura stramonium—Vinegar (and citric acid).

5. In a woman rather advanced in life, there occurred from two grains of the *extract of stramonium*, taken in two doses within eight hours, stupefaction, anxiety, convulsions of the limbs and involuntary weeping; symptoms that were frightfully increased by partaking of coffee. They rapidly disappeared after taking a few ounces of strong *vinegar*.

Besides vinegar, *citric acid* is also a specific antidote to stramonium, as I have shewn in another place, from the use of currants, which contain the latter, and I am very much mistaken if the true antidote of all the *solanaceæ* be not vinegar, *citric* and *malic acid.*

Antidote to Ignatia—Vinegar.

6. A paralytic stiffness in the lower limbs, with involuntary twitchings in them, great anxiety, coldness of the whole body, with dilatability of the pupil, &c., were the symptoms produced in a youth of 20 years, by an overdose of *ignatia.* His head was free, his consciousness perfect; but on account of the anxiety, he could not express himself properly. Intelligence of a somewhat unpleasant nature aggravated his condition; the same was the case with coffee and smoking tobacco.

For this unpleasant state I gave some camphor, but no good was thereby effected. But on letting him drink very strong vinegar, eight ounces in the course of half an hour, he was restored so completely that the same afternoon he was able to make one of a party of pleasure.

In poisoning with nux vomica I would also advise vinegar, as it is nearly allied in the natural order of botany to the former.

Antidote to Veratrum Album—Coffee.

7. I had the greatest difficulty in restoring two children, the one a year and three quarters old, the other five years old, who had both taken *white hellebore* by mistake, the former four grains, the latter seven grains. Those conversant with such matters will consider both to be *of themselves* fatal doses, and as long as no antidote is known, *absolutely* fatal.

But few minutes elapsed before the greatest changes were observable in both children. They became quite cold, they fell down, their eyes projected like a suffocating person's, the saliva ran continually from their mouths, and they seemed devoid of consciousness, when I saw them half an hour after the accident.

It had already been tried to incite them to vomit by means of a feather, without success, indeed with an aggravation of their symptoms, as I was told. Milk administered by clyster and poured down the throat in large quantities had had no effect, except the production of scanty vomiting which did no good but only increased the faintness.

When I arrived both seemed to be at the point of death. Distorted, projecting eyes, disfigured, cold countenance, lax muscles, closed jaws, imperceptible respiration. The infant was the worst.

The impending death by apoplexy, the failing irritability, at once induced me to combat the symptoms if possible with strong coffee. I introduced, as far as the clenched jaws would allow me, the warm coffee into the mouth, but I chiefly sought to give it in large quantity by means of the enema. It was successful. In the course of an hour all the danger was gone. The heat, the consciousness, the respiration returned. A sleep of several hours, during which the breathing was slower than usual, refreshed them. All the operations of the animal economy were again almost in good order. But the children remained weak,

emaciated and every night before midnight were attacked with a kind of fever that threatened to prove fatal in a chronic manner. Peruvian bark given for a fortnight, however, removed this sequela, and as I am informed, they are still (a year and a half have since elapsed) in the enjoyment of good health.

I may here observe, that in the case of severe poisonings we have not unfrequently to combat a remnant of chronic affections, because the antidote of the noxious substance even though it be specific only *acts in a contrary sense*, consequently belongs to the class of palliatives which are unable to remove the secondary effects of the poison that has been swallowed, especially if it has had time to make some inroads on the system. Moreover, we must not imagine that an antidote can be such a perfect counter-poison of the poison that all the symptoms of the latter shall be covered by it, as two triangles with equal sides and angles cover one another; nor can it, consistently with all analogy, be denied, that the noxious substance, in combination with an antidote ever so appropriate, must develope a new action, which could not have been anticipated from each singly, and which will play its part in the body for a longer or shorter time. Thus after poisoning by opium, which has been removed by giving a considerable quantity of coffee, we perceive an extraordinary secretion of urine, even in persons in whom the accustomed coffee did not produce this effect of itself; and a grain of opium in an infusion of from one to one and a half ounce of coffee, taken once or several times a day, gives perhaps the most sure and powerful diuretic that the medical art possesses.

Antidote to Mezereum—Camphor.

8. An otherwise robust man took mezereum internally for some complaints that he had. But as he continued the use of this drug even after the disappearance of these complaints, he became affected with intolerable itching over the whole body, which did not allow him an hour's sleep. He discontinued the medicine, came to me thirty-six hours afterwards and assured me that he could no longer endure the itching, which increased every hour—the first direct action of mezereum lasts very long. I gave him thirty grains of camphor, six grains to be taken every six hours, and before he had taken it all, his itching had disappeared.

THERAPEUTICS AS A SCIENCE.

VII.

(*Continued from* Vol. xix, No. 6, p. 230.)

GROWTH OF HOMŒOPATHY IN HAHNEMANN'S MIND (continued).

IT WAS in the year 1799 that Hahnemann succeeded in verifying in a remarkable way the law of similars. This was in the treatment of scarlatina. Having given a history of the epidemic that visited Germany in this year and related a particular case of the disease which he had under treatment and in which only the prodromal symptoms had just begun, he thus tells us how he came by his discovery of Belladonna as a prophylactic and curative remedy: "Now I knew only too well that the ordinary favorite remedies, as in many other cases, so also in scarlatina, in the most favorable cases leave everything unchanged, and therefore I resolved in this case of scarlet fever just in the act of breaking out, not to act as usual in reference to individual symptoms, but if possible (in accordance with my new synthetical principle) to obtain a remedy whose peculiar mode of action was calculated to produce in the healthy body most of the morbid symptoms which I observed *combined* in this disease. My memory and my written collection of the peculiar effects of some medicines, furnished me with no remedy so capable of producing a counterpart of the symptoms here present, as *Belladonna*."

He therefore concluded that "it (Belladonna) alone could fulfil most of the indications of this disease, seeing that in its primary action it has, according to my observations, a tendency to excite even in healthy persons great dejected pusillanimity, dull staring (stupid) look, with inordinately open eyelids, obscuration of vision, coldness and paleness of the face, want of thirst, excessively small, rapid pulse, paralytic immobility of the limbs, obstructed swallowing, with shooting pains in the parotid gland, pressive headache, constrictive pains in the abdomen, which become intolerable in any other posture of the body besides bending forwards, rigor and heat of certain parts to the exclusion of others, *e.g.*, of the head alone, of the arms alone &c." And then he goes on:—"If, thought I, this was a case of approaching scarlet fever, as I considered was most probable, the subsequent effects peculiar to this plant—its power to produce synochus, with erysipelatous spots on the skin, sopor, swollen,

hot face, &c.—could not fail to be extremely appropriate to the symptoms of fully developed scarlatina." His most sanguine expectations were fulfilled. Belladona proved an invaluable prophylactic and curative remedy in Scarlatina of the smooth variety.

Hahnemann published an account of this discovery in the form of a pamphlet in 1801. It is from this pamphlet as translated by Dr. Dudgeon that we have given the above extracts. He speaks of "my memory and written collection" and "according to my observations." But he does not say positively or distinctly whether he had actually tried Belladonna in the healthy human body, according to what he had indicated in his *Essay on a New Principle*. In the absence of this positive declaration we cannot say what he means by "according to my observations," whether they were casual or experimental observations. Be this as it may, the effects that he ascribes to Belladonna are pure pathogenetic effects, and their successful application to the prophylactic and curative treatment of scarlet fever may be looked upon as the second most striking inductive proof of the law of similars, the first having been afforded by Cinchona in intermittent fever. It is true that he had given proofs, or as he called them synthetic illustrations, of the similia simillibus maxim, but, as we have said, they were not so striking because not so fully correspondent, as we have in the examples of Cinchona and Belladonna.

It was while making these Belladonna experiments that Hahnemann made the discovery, which is pre-eminently his own, the discovery of the small dose. He does not tell us how he came by this discovery, what led him to think of reducing his doses. Probably the fearful aggravations from which some of his patients must have suffered when treated after the law of similars with ordinary doses, (as in the case of the patient with colicodynia treated with massive doses of Veratrum,) must have induced him to try smaller and smaller doses, till he came to the incredibly small ones in his treatment of scarlet fever. The explanation, that he gave at this time (1801) of the action of these doses minute beyond the dream of orthodoxy, though not altogether free from hypothesis and assumption, when divested of these, is more rational than what he offered later on. We give it in his own words:

"A very hard dry pill of extract of belladonna produces in a robust, *perfectly healthy* countryman or laborer *no effect.* But from this it by no means follows that a grain of this extract would be a proper, or two weak a dose for this or a similar stout man *if he was ill, or if the grain were given in solution,*—certainly not. On this point let the pseudo-empiricism of the compendiums hold its tongue, let us hear what experience says. The most healthy robust thresher will be affected with the most violent and dangerous symptoms from one grain of extract of belladonna, if this grain be dissolved thoroughly in much (e. g. two pounds of) water by rubbing, the mixture (a little alcohol being added, for all vegetable solutions are rapidly decomposed) made *very intimate* by shaking the fluid in a bottle for five minutes, and if he be made to take it by spoonfuls within six or eight hours. These two pounds will contain about 10,000 drops. Now if one of these drops be mixed with other 2000 drops (six oz.) of water (mixed with a little alcohol), by being vigorously shaken, one teaspooonful (about twenty drops) of this mixture given every two hours, will produce not much less violent symptoms in a strong man, *if he is ill.* Such a dose contains about the millionth part of a grain. A few teaspoonfuls of the mixture, will, I assert bring him to the brink of the grave, if he was previously regularly ill, and if his disease was of such a description as belladonna is suitable for.

"The hard grain-pill finds few points of contact in the healthy body; it slides almost completely undissolved over the surface of the intestinal canal invested with a layer of mucus, until it (in this manner itself covered with mucus), completely buried in excrement, is speedily expelled in the natural manner.

"Very different is it with a solution, and particularly with a thorough solution. Let this be as weak as it may, in its passage through the stomach it comes in contact with many more points of the living fibre, and as the medicine does not act atomically but only dynamically, it excites much more severe symptoms than the compact pill, containing a million times more medicine (that rests inactive), is capable of doing."

But for the arbitrary distinction between atomic and dynamic action, the explanation is perfectly scientific. The increase of irritability of living beings in disease and their consequent

greater susceptibility to the action of medicines in exceedingly reduced doses, are facts and need no other auxilliary, in the shape of an hypothesis or an assumption, to account for the action of these reduced doses, however incredibly small they may be.

The discovery of the small dose at this early stage was most fortunate. Without it the further development of homœopathy would have been impossible. The frequent aggravations from ordinary doses, even if they would occasionally lead to cures, would have prevented patients from submitting to a treatment which was the reverse of pleasant. And who knows but that these aggravations might not, in many cases, be the prelude to fatal terminations? A conscientious physician could not go on with his experiments under these circumstances. Nothing but a firm faith in the law and an earnest determination to find out the cause of the aggravations, could have induced Hahnemann to think of reducing his doses, which has been followed by the most wonderful discovery in medicine, co-ordinate only with the discovery of the law.

After this discovery of the small dose we find that the progress that Hahnemann made in the development of his system was rapid. In 1805 he made a good collection of the Positive Effects of Medicines in healthy man, which he published in Latin under the title of *Fragmenta de Viribus Medicamentorum Positivis sive in Sano Corpore Humano Observatis.* The positive effects of twenty-seven medicines* are given in this treatise. The major portion of these effects, he tells us in the Preface, was elicited by experiments with the drugs on himself and on others whom he knew to be most healthy and free from disease. The remainder were drawn from the incidental observations of medical authors.

Immediately after the publication of the *Fragmenta* appeared the *Medicine of Experience* in which Hahnemann seems to

* These are: 1. Aconitum napellus, 2. Acris tinctura (causticum), 3. Arnica montana, 4. Atropa belladonna, 5. Laurus Camphora, 6. Lytta vesicatoria, 7. Capsicum annuum, 8. Chamomilla matricaria, 9. Cinchona officinalis, 10. Cocculus menispermum, 11. Copaifera balsamum, 12. Cuprum vitriolatum, 13. Digitalis purpura, 14. Diosera rotundifolia, 15. Hyoscyamus niger, 16. Ignatia amara, 17. Ipecacuanha, 18. Ledum palustre, 19. Helleborus niger, 20. Daphne mezereum, 21. Strychnos nux vomica, 22. Papaver somniferum, 23. Anemone pratensis (Pulsatilla), 24. Rheum, 25. Datura stramonium, 26. Valeriana officinalis, 27. Veratrum album.

abandon the inductive method, and deduces the law of similars from what he calls two maxims of experience. "Every disease," says he, "is owing to some abnormal *irritation* of a peculiar character, which deranges the functions and well being of our organs. But the unity of the life of our organs and their concurrence to one common end does not permit two effects produced by abnormal general irritation to exist side by side and simultaneously in the human body. Hence," according to him, "our *First maxim of experience*: When two abnormal general irritations act simultaneously on the body, *if the two be dissimilar* then the action of the one (the weaker) irritation will be suppressand suspended for sometime by the other (the stronger). And, on the other hand, our *Second maxim of experience: When the two irritations greatly resemble each other,* then the one (the weaker) irritation, together with its effects, will be completely extinguished and *annihilated* by the analogous power of the other (the stronger)."

As illustrations of the first maxim he brings forward the fact of the temporary suppression of one disease by another stronger disease. "If a person be infected at the same time by, for instance, the miasmata of measles and small-pox (two dissimilar irritations), and if the measles have appeared first, it immediately disappears on the day of the eruption of the small-pox, and it is only after the latter is completely gone that the measles again returns and completes its natural course." He also says that he had observed "an infection of the epidemic febrile swelling of the parotid gland (mumps) immediately yield when the protective inoculation with small-pox had taken effect, and it was only after the lapse of fourteen days, when the areolar redness of the pocks had passed away, that the mumps again appeared and completed its regular course of seven days." He cites the authority of Baron Larrey, according to whom "the plague of the Levant immediately remains stationary whenever the small-pox begins to prevail, but again returns when the latter ceases."

As illustration of the second maxim he cites the fact not only of the suppression but of the absolute annihilation of cow-pox by small-pox the stronger similar disease, and of certain cutaneous eruptions by cow-pox whose secondary eruptions are similar. And he says: "It is the same thing in the treatment of diseases

by means of medicines. If the itch of workers in wool be treated by strong purgatives, such as jalap, it gradually yields almost completely, as long as the purgatives are continued, as the action of these two abnormal irritations cannot co-exist in the body; but as soon as the effect of the artificially excited irritation ceases, that is to say, whenever the purgatives are discontinued, the suspended itch returns to its former state, because a dissimilar irritation does not remove and destroy the other, but only suppresses and suspends it for a time. But if we introduce into a body," he goes on, "affected by this itch a new irritation—of a different nature, it is true, but still of a very similar mode of action—as for example the calcareous liver of sulphur, from which others besides myself have observed an eruption produced very similar in character to this itch, then, as two general irritations cannot co-exist in the body, the former yields to the latter, not for a short time merely, but permanently, as that last introduced was an irritation very analogous to the first; that is to say, the itch of the wool-workers is really cured by the employment of the calcareous liver of sulphur (and for the same reason by the use of sulphur powder and sulphurous baths)."

He finds even in the instances of local irritations verifications of his two maxims of experience, Thus, "the pain of a burnt hand is instantly suppressed and suspended by dipping it in cold water, as long as the immersion is continued, but it immediately recurs with renewed violence on withdrawing the hand from the water." But if the burnt hand is constantly kept moistened with highly concentrated alcohol, it "is—in bad cases in a few hours, in slighter ones much sooner—completely restored and permanentiy cured of the pain of the burn."

These two maxims of experiences being, according to him thus indubitably established, being in fact but expressions of laws to which all sentient living beings are subject the inference from them is natural and inevitable, namely: "In order therefore to be able to *cure*, we shall only require *to oppose to the existing abnormal irritation of the disease an appropriate medicine*, that is to say, *another morbific power whose effect is very similar to that the disease displays.*"

Admitting that what Hahnemann calls his two maxims of experience are absolutely true, they but afford an explanation

of the law of similars, that is, of the action of remedial agents in removing diseased conditions similar to those they can produce when administered to the healthy human body. The law must stand on the actual facts of cure and not on any supposed maxims drawn necessarily from limited experience. It is unfortunate, therefore, that Hahnemann should have attempted to *deduce* the law from such maxims. It appears to us that, having by repeated trials satisfied himself of the truth of the law, he wanted something obvious and satisfactory to every body from which it may be deduced as a legitimate inference.

However this may be, we have in the *Medicine of Experience* a full and clear exposition of the law and of his system of therapeutics founded upon it.

He first of all distinguishes between *aliments* and *medicines;* the former are pure nourishers of the body, the latter "are abnormal irritants, only fitted for altering our healthy body, disturbing the vitality and the functions of the organs, and exciting disagreeable sensations, in one word, making the healthy ill." He goes so far as to say: "There is no medicinal substance whatsoever that does not possess this tendency, and no substance is medicinal which does not possess it."

He likens medicines to specific morbific miasmata, such as small-pox, measles, the venom of vipers, the saliva of rabid animals, &c., and says that each medicine "causes a peculiar specific disease—a series of determinate symptoms, which is not produced precisely in the same way by any other medicine in the world." And that therefore their pathogenetic power, their absolute true action on the healthy human body, can only be determined when each is given singly and uncombined. Hence he lays down the following mode of proving: "We administer these medicines experimentally, the weaker as well as the stronger, each singly and uncombined, to healthy individuals, with caution, and carefully removing all accessory circumstances capable of exercising an influence; we note down the symptoms they occasion *precisely in the order* in which they occur, and thus we obtain the pure result of the form of disease that each of these medicinal substances is capable of producing, absolutely and by itself, in the human body." And then he tells us that "in this way we must obtain a knowledge of a sufficient supply of arti-

ficial morbific agents (medicines) for curative implements, so that we may be able to make a selection from among them." In a note he adds that his *Fragmenta* are something of this kind.

It will be seen from the above that Hahnemann at this time had become more precise and therefore more scientific even as regards the method of the proving of drugs and of recording the symptoms thus elicited. These should be noted down not at random, but in the *chronological order* of their occurrence.

The application of the law becomes correspondingly precise, and Homœopathy stands forth in its truly scientific aspect. The disease to be cured must be accurately examined, that is, all its appreciable phenomena should be noted down *historically* and *in the order in which they occur,* marking particularly the more severe and troublesome chief symptoms. And we should "oppose to this disease another disease as like it as possible, or in other words, a medicinal irritation analogous to the existing irritation of the disease, by the employment of a medicine which possesses the power of exciting as nearly as possible all these symptoms, or at all events, the greater number and severest, or most peculiar of them, and *in the same order,*—in order to cure the disease we wish to remove, certainly, quickly, and permanently."

We shall see later on that Hahnemann did not adhere to his own ideal in the matter of construction of the materia medica. Even in the *Fragmenta,* which was published almost simultaneously with the *Medicine of Experience,* and which may be looked upon as a specimen and an earnest of the future materia medica, the symptoms are not noted down in the order of their occurrence. They are dislocated from their historical development, and all that is done is to mention at the end of some of these dislocated symptoms the times when they appeared after the exhibition of the drug that was under experiment. As many persons were engaged in the experiments, and as the symptoms are not referred to them individually in groups, but are mixed up together, this mention of the times, can give no clue to the order, of their occurrence. This defect, far from being remedied, is rendered more glaring in the *Materia Medica Pura* and in the *Chronic Diseases.*

(To be continued.)

EDITOR'S NOTES.

Ovarian Tumour in a Girl aged 3.

Hültl (*Monats f. Geburts. u. Gynäk.*, March 1900) recently reported in a Hungarian paper an abdominal section on a girl aged 3 suffering from hypogastric pain and swelling for several weeks. An ovarian tumour was discovered on the right side; it was as big as a man's fist, and weighed a quarter of a pound. It was removed; the opposite ovary was healthy. Recovery was rapid. The growth consisted of a serous and a dermoid cyst combined. The remains of the ovary formed a small prominence on the under-surface of the tumour. Dermoid elements are usual in ovarian tumours before pregnancy.—*Brit. Med. Journ.*, June 23, 1900.

Reflex and Electrical Excitability in Pregnancy.

Tridondani (*Ann. di Ostest. e Ginecol.*, xxii, p. 203, March, 1900) has made a series of observations on reflex and electrical excitability in pregnant and non-pregnant women. In the former he found that the superficial reflexes were sensibly diminished, with the exception of the abdominal one, which was a little increased in primiparæ; but the deep and the tendon reflexes were markedly increased, especially the patellar. The pharyngeal and pupil reflexes were weakened, and the latter showed a state resembling the Argyll-Robertson phenomenon. Electrical excitability was sensibly and constantly diminished in pregnancy. All these modifications were more marked in primiparæ than in pluriparæ, and late in pregnancy rather than early. The normal condition of affairs was re-established about ten days after labour.—*Brit. Med. Journ.*, June 23, 1900.

Successful Removal of Stomach for Adeno-Carcinoma.

Delatour (New York *Medical Record*, February 3rd, 1900) performed this operation on a woman aged 26, suffering from vomiting, local pain, and great emaciation. The tumour occupied the pylorus, where it was over an inch in thickness, and nearly all the stomach except the cardiac end. After freeing the stomach from the greater and lesser omenta, a clamp was applied to the duodenum, and the intestine was cut across 1 inch from the pylorus. The œsophageal end was then severed, much fluid escaping from the stomach, but the field of operation was protected with gauze sponges. A few silk sutures in double layer were used to reduce the œsophageal opening, then it could be coapted to the cut end of the duodenum, to which it was

sewn with fine silk. The operation, performed on May 2nd, 1898, took forty minutes. In September, 1899, the patient was in excellent health; she was in the seventh month of pregnancy. Delatour lost sight of her after September.—*Brit. Med. Journ.*, June 23, 1900.

Examination of the Blood: Its Value to the General Practitioner.

At the recent meeting of the American Medical Association, M. Howard Fussell read a paper on this subject in the Section of Practice of Medicine. He said that in some cases the blood examination is as important, and in other cases it is more important than the examination of the urine, and it is already acknowledged that an examination of the urine is necessary in every case. As a general practitioner the author examines the blood in all obscure cases. As a result of such an examination: (1) The physician will avoid administering iron to a patient because the face is pale; since all pale people are not anæmic. (2) It will be found that patients with flushed faces often have decided reduction of the hæmoglobin and of the number of red blood corpuscles. (3) Patients with cardiac and pulmonary symptoms are sometimes diagnosed as cases of organic disease, when a blood examination would reveal chlorosis. (4) Blood examination will positively indicate the presence or absence of malaria. (5) The diagnosis between leukæmia and other organic conditions, such as tuberculosis and carcinoma of the stomach, may be made. (6) The blood examination combined with the Widal test will diagnose between typhoid fever and malaria; or possibly, show a combination of the two diseases. (7) Counting the leucocytes will often give satisfactory results in clearing up obscure conditions. The physician does not need to take a microscope to the bedside of the patient; if the diluting tube is surrounded by a rubber band the blood may be preserved for a long time, and the counting may be done at leisure.—*Brit. Med. Journ.*, July 7, 1900.

Arsenical Pigmentation and Keratosis with Ascites.

In the *Johns Hopkins Hospital Bulletin* for April Dr. Louis P. Hamburger has recorded a case in which the above conditions were present. A man, aged 42 years who had been taking for psoriasis from five to eight minims of Fowler's solution three times a day off and on for 10 years, came under observation. His illness began eight months previously with a "cold" and a cough. About a month later his abdomen began to swell and at the end of the day's work he noticed

that his legs were swollen. The skin of almost the whole body was of a mottled yellowish-brown colour, small rounded areas of less pigmented skin alternating with more deeply-coloured parts. The face was slightly affected and the complexion was muddy. The hands and feet were not affected. On the palms the skin was diffusely thickened, and here as well as between the fingers were numerous dirty grey warts and callosities, varying in size from that of a pin-head to that of a pea. The soles were similarly affected. The abdomen was distended with fluid and the shins pitted on pressure. Thomas Hunt was probably the first who called attention to arsenical pigmentation. He wrote: "The trunk of the patient first, and, subsequently, all those parts of the body which are by the dress protected from the atmosphere, become covered with a dirt-brown, dingy, unwashed appearance." Palmar and plantar keratosis were described first by Erasmus Wilson in 1868. In 1887 Mr. Hutchinson called attention to several cases and pointed out, further, that the use of arsenic might lead to the production of a peculiar form of cancer. Dr. Hamburger thinks that the ascites present in his case was also due to the arsenic, for Mr. Hutchinson has described a similar but more severe case in which paracentesis was performed three times and recovery followed only on discontinuing the drug. In Geyer's report on an outbreak of arsenical poisoning due to contaminated water several similar cases are quoted. The inference certainly seems justifiable and is, moreover, supported by analogy. For if ingested arsenic will irritate skin and mucous membrane, why not also serous membrane? —*Lancet*, July 7, 1900.

The Late Mrs. Gladstone.

On June 14th Catherine Gladstone, the wife of perhaps the most notable statesman of the expiring century, passed from sleep into death. She was in her eighty-ninth year and no transit from this world to the next could have been more peaceful. Nearly all the members of her family were present—a family as devoted to their mother as she to them and to any one of whom the exquisite lines of Pope might apply—

> "Me, let the tender office long engage,
> To rock the cradle of reposing age,
> With lenient arts extend a mother's breath,
> Make languor smile and smooth the bed of death,
> Explore the thought, explain the asking eye,
> And keep awhile one parent from the sky."

To the deceased lady the medical profession owes a great debt in that she was the pioneer of the free convalescent home movement. It

grew out of the distress caused by the cholera epidemic of 1866 which forced upon her attention the necessity for such institutions. She appealed to the public and generous donations were sent in including one of £1000 from the Queen. The first home was opened at Snaresbrook, but it was transferred in 1869 to Woodford. From the beginning she set her face against granting to subscribers any privileges in the way of "letters" or nomination of patients, and this opinion was endorsed at a great meeting held at the Mansion House in 1876, where Mr. Gladstone spoke. This of course is the way in which any charity should be worked, but we fear that such a method needs the personal magnetism of a Gladstone to make it generally feasible. No better memorial could be raised to the memory of her who has gone than for one of the large London hospitals which has not already done so to do away with subscribers' letters.—*Lancet*, June 23, 1900.

Diseases Which Simulate Appendicitis.

The difficulties of diagnosis in cases of supposed appendicitis are very great. Many other morbid conditions have been mistaken for inflammation of the appendix, and in some cases even an operation has been performed. On the other hand, real cases of appendicitis have been diagnosed as suffering from some other malady. In the *New York Medical Record* of May 26th there is a paper by Dr. E. J. Janeway of New York, which was read previously at a meeting of the Practitioners' Society, on "Some of the conditions Simulating Appendicitis." We will mention a few of the principal cases which have come within Dr. Janeway's knowledge or about which he has been informed by physicians. Neuralgia affecting the lower abdominal nerves has in a number of cases given rise to doubt. In two cases in which operations had been performed the appendix was found to be normal and was not removed. In some the neuralgia was the reflexed pain of pneumonia or pleurisy. Another source of difficulty is in conditions of the right kidney, such as hydronephrosis and moveable kidney. Cholecystitis has in several cases been operated on from the belief that peri-appendicular inflammation existed. Ulcers in the gastro-intestinal tract, or catarrh with colic and cancer of the cæcum, have led to the belief in the existence of appendicitis. Fæcal impaction may be mistaken for exudation, and *vice versâ*. In a certain class of cases, not very frequent, a non-malignant ulcer of the hepatic flexure of the colon, with fæcal accumulation and possibly a moveable kidney, may mislead the inexperienced. An important fact is mentioned by Dr. Janeway that he has known the removal of the appen-

dix to be done for the general aches and pains of folicular tonsillitis. It is only fair to add that he has been consulted in two cases of peritonitis from perforation of the appendix which were ushered in by follicular tonsillitis. Abscess of the ovary, retained menstrual fluid with sapræmia causing chill, or retro-peritonial abscess may mislead. Hypochondriacal patients may fasten on the appendix as a source of evil and may receive the advice to have an operation immediately. Dr. Janeway's paper is of much value as drawing attention to the importance of an exact diagnosis in cases apparently of inflammation of the appendix, and should serve to guard against every case of pain and tenderness in the right iliac fossa being looked upon as appendicitis.—*Lancet*, July 7, 1900.

Fæcal Vomiting and Antiperistalsis.

G. Langmann (*Festschrift A. Jacobi*, New York, 1900) describes the case of a young woman, aged 21, who was admitted to the German Hospital in New York in 1889 for vomiting and hæmatemesis. Four years previously the left leg had been apparently paralysed for nine months after an injury. Since that time severe pain along the spine was occasionally felt. During the two years before admission patient was said to have had attacks of peritonities, vomiting, and hæmatemesis, and had habituated herself to hypodermics of morphine. In the hospital the patient sometimes vomited fæcaloid material, sometimes actual hard formed fæces. Scybala an inch thick were at one time thrown up. A fistulous communication between the stomach and colon was suspected, owing to repeated hæmatemesis and circumscribed pain in the gastric region. Indigo administered with an enema was ejected, together with fæces, from the mouth in less than fifteen minutes. An exploratory laparotomy was performed, but nothing abnormal could be discovered except a darning needle, which was impacted in the anterior wall of the stomach between serosa and mucosa. The wound healed well, and the vomiting ceased. About thirty-three days after the operation, however, nausea with vomiting of mucus and blood recommenced. Afterwards hard fæces were brought up again. About six weeks after the operation the stomach was washed out, and tepid water containing indigo was injected into the rectum. The patient was carefully watched, so that deception could be excluded, and yet nine minutes after the enema was administered she vomited a fæculent mixture of milk coagula with indigo. A week later some hard fæces wrapped in paper were found under the patient's pillow. The patient left the hospital soon afterwards, and

was detected in some tricks at another hospital. She was then lost sight of. Langmann believes that the stercoraceous vomiting was genuine and spontaneous, and could not be brought on by will, and that only after perceiving on what point the medical interest centered did she try to imitate a symptom which had created so much sensation.—*Brit. Med. Journ.*, July 7, 1900.

Allium Sativum in Pulmonary Tuberculosis.

G. Cavazzani (*Suppl al Policlinico*, April 7th) states that he has for the last two years used garlic in the treatment of pulmonary tuberculosis in the civil hospital at Venice and in his private practice. Garlic, according to his investigations, may be given in the crude state or prepared. From 4 to 6 grams of the substance in a moderate state of desiccation may be administered daily. It should be given in divided doses, and in such a form as to remove the only possible cause of intolerance—namely, the taste. He continues the administration for a long time, but marked improvement in cases amenable to the treatment are manifested within the first month, sometimes within a few days. His own experience extends to more than 100 cases, and, with the data supplied to him by various professional brethren, his material amounts to more than 200 cases. Among them were examples of every stage of disease. Leaving aside some quite exceptional cases, all were improved by the garlic. In some the amelioration was so marked as to induce hope of a cure, every morbid symptom recognisable by the most careful examination having disappeared. Incipient cases are, of course, the most favourable, but excellent results were frequently obtained even in cases presenting well marked symptoms of the second stage. These results were observed not only in hospital but in private practice, where the beneficial effect could not be attributed to improvement in hygienic conditions. In all Cavazzani's cases the clinical diagnosis was confirmed by the bacteriological examination of the sputum. The improvement begins with a diminution both in frequency and in quantity of the cough and expectoration within the first days of the treatment; often the sputum from muco-purulent becomes purely mucous on the second or third day, probably by the antiseptic action of the volatile oils in the garlic. In favourable cases expectoration ceases altogether after a time. The physical signs are modified with greater or less rapidity according to the more or less advanced stage of the disease and the extent of the morbid process. The temperature often becomes normal, night sweats cease and the appetite

almost invariably improves; weight is gained and sleep becomes regular. Hæmoptysis in all the cases observed by the author and his friends had ceased without the use of any other remedy. The author has not found the garlic cause any disturbance of digestion.—*Brit. Med. Journ.*, June 30, 1900.

Resection of the Cervical Sympathetic Ganglia.

Thomas Jonnesco recorded very satisfactory results following the operation of excision of the cervical sympathetic cord in glaucoma (vide Epitome, No. 353, November 4th, 1899), and now summarises in the *Archives des Sciences Médicales* (September and November, 1899) a total of 61 cases, comprising various maladies, for which he had performed this operation. Seven of these were cases of glaucoma, 1 was glaucoma complicated with exophthalmic goitre, 8 were cases of Basedow's disease, of which 5 were primary and 3 secondary; 43 were cases of idiopathic epilepsy, 1 of epilepsy with chorea, and 1 of epilepsy with Basedow's disease. The operation of total bilateral excision of the three cervical ganglia was carried out in 42 of the above cases. In 8 cases the operation was unilateral and included removal of all but the inferior ganglia. In 7 cases (glaucoma) the superior cervical ganglion was removed (6 being bilateral and 1 unilateral). Of the cases of epilepsy 6 died subsequently of the disease or from some intercurrent malady. No case succumbed under the operation. (*a*) In exopthalmic goitre the operation of section of the cervical sympathetic cord in the neck had been already practised by Jaboulay on 3 cases during February, March, and April, 1896. In the following August Jonnesco performed his first operation of incision of the upper and middle cervical ganglia on both sides, for this affection, and since then the operation of excision has grown in favour. Considering that the superior cervical ganglion gives rise to nerve filaments for the eyeballs, that the inferior ganglion gives rise to vaso-dilator fibres and secretory fibres for the thyroid gland as well as to accelerator fibres of the heart, the operation to be successful should involve complete removal of both these structures. (*b*) In epilepsy one of the objects aimed at is to secure a modification of the cerebral circulation, to produce and maintain a steady and slight arterial hyperæmia so as to improve the nutrition of the nerve cells and to sweep away toxic substances. This result can be achieved either by simple section (Jaboulay), or by excision of the superior cervical ganglion (Alexander). It is to be noted that while excision of the ganglion destroys the vasoconstrictors of the carotid vascular

area, excision of the inferior ganglion acts similarly as regards the vertebral artery, wherefore it appears that an excision of the total cervical cord and ganglia is needed to effect the intracranial circulation as a whole. (c) As regards the therapeutic value of the operation. Jonnesco records the following: In 10 cases of Basedow's disease 6 were cured and 4 obtained very marked amelioration of symptoms. All these were really primary cases of Basedow's disease, and 1 of these was complicated with glaucoma. The first phenomenon noticed was the immediate disappearance of the exophthalmos, and on the day following operation there were noticed an absence of nervousness and of flushes of heat, and the sensation of general feeling of well-being. The tachycardia, trembling, carotid pulsation disappeared gradually thereafter, the pulse sinking from 140 to 70, 80. The swelling of the thyroid also gradually diminished. In 45 cases of epilepsy the operation was followed by complete cure in 10 cases, 5 of these having been free from fits for two years, 1 being free for nineteen months, 3 for eighteen months, and 1 for six months. In 6 epileptics there was a notable amelioration of symptoms, and in 2 there was no improvement. Six patients died of intercurrent illness or of the epilepsy some time after the operation. The marked improvement in cases of glaucoma has been recorded already in the Epitome referred to and needs no special mention here.—*Brit. Med. Journ.* June 23, 1900.

Marriages between Persons of the same Sex.

The determination of the sex of a new-born child with malformed genital organs must often be a matter of considerable difficulty. With the advance of years and the advent of puberty the changes which take place in the body and the development of secondary sexual characters usually enable a correct diagnosis to be made. It would seem hardly credible that individuals could grow up and even enter the marriage state without their exact sex ever having been determined. In two articles of great interest in the *Revue de Gynécologie et de Chirurgie Abdominale*, March-April, 1899, and January-February, 1900, Dr. François Neugebauer has collected notes of no less than 55 cases of marriage between persons of the same sex. He has also collected from the literature 11 cases in which marriage engagements were broken off on the discovery of an error having been made in the sex of one or other of the parties, and 15 cases of "women" living a life of prostitution who were in reality of the male sex. A careful examination by a competent observer will rarely fail to deter-

mine with certainty the sex of a new-born child, but in many cases the matter is left to the judgment of the attendant nurse or midwife, who has not a sufficient knowledge of the various kinds of malformation of the genital organs to enable her to come to a correct conclusion. The unfortunate consequences that may result from an error are illustrated by Dr. Neugebauer's cases and by the fact that two unhappy victims of such a mistake were driven to commit suicide. In the 53 cases recorded, in 49 a man had been married as a woman, in three cases a woman had been married as a man, while in one the person was said to be an hermaphrodite. The majority of the cases of the men appear to have been very evident cases of peno-scrotal hypospadias. Some of these cases, however, even when examined by trained observers, cannot be decided upon with absolute certainty unless a microscopical examination of the supposed ovaries or testes is possible. The legal relations of the correct determination of the sex of a new-born child may be of the greatest possible importance. The question of the right of succession or inheritance to landed estate or to an estate limited by entailment may depend upon a correct appreciation of the preponderance of one or the other sex in the case of an hermaphrodite. If the subject of such a malformation die a short time after birth the rights of other people may rest to a large extent upon the decision of the medical attendant in the matter of the exact sex. In such cases no conclusion should be come to without the most complete post-mortem examination and if necessary a microscopical examination of the sexual glands. The law in France with regard to the nullity of marriage between two persons of the same sex differs from that in this country. If the person married is a malformed woman incapable of sexual intercourse then according to the French law no ground exists for declaring the marriage void. Such a condition is, however, recognised by English law as a sufficient cause for annulling the contract. If, on the other hand, the person is a malformed man there can have been no legal marriage and it is of necessity null and void. If the case is one of an hermaphrodite then nullity of marriage must exist since whatever the sex of the other contracting party there must be identity of sex between the two persons. In view of the grave results that may ensue cases of doubtful sex should be investigated with the greatest care, and in all cases where any doubt remains the child should be brought up and educated as a male.—*Lancet*, June 23, 1900.

Fatal Cases of Ptomaine Poisoning.

On June 19th an inquest was held at Plymouth touching the death of Mabel Elizabeth Starling, aged 20 years. This was the second death in the family as alleged from the same cause. A week previously to her death the deceased with eight other members of the family partook of pork for dinner. Of these nine persons "eight suffered from symptoms of poisoning, two had died, and one escaped entirely. Mr. Starling suffered in the slightest degree; Mrs. Starling suffered severely, but the symptoms went off quickly. One son escaped for 24 hours. The other children were taken ill at varying periods of from two to four hours after dinner but recovered during the night." The family had partaken of fish (gurnet) for breakfast, but since none of them were affected until after dinner it may reasonably be concluded that the fish was not the offending agent. No other cases of persons who had eaten pork from the same carcass being attacked have been reported, and since there was direct evidence that the meat when delivered to the family was to all appearance fresh and good it would seem in the highest degree probable that it became subsequently infected with micro-organisms. It seems strange that a number of people who have eaten of the same poisonous article of diet should be affected so differently as regards the period of onset of the symptoms, their degree of severity, and their duration. It must be borne in mind, however, that food may be poisonous in two ways: (1) from the direct irritant and toxic effects of animal alkaloids developed by the action of germs before the food is ingested; and (2) by the germs themselves setting up an infective process in the body and liberating during their culture the alkaloidal poison, just as in acute specific infective fevers. Writing on the subject Sir George Buchanan remarked: "The phenomena which were spoken of as food-poisoning are claiming an ever-growing evidence to be regarded as true infective diseases, as much so as was scarlet fever or tuberculosis. They have not been generally admitted into the rank (1) from the circumstance that some of them have seemed to be wanting in the incubation period, and (2) because they are rarely recognised as being transmissible from person to person." Thorough cooking kills the germs, but it does not destroy the animal alkaloids which they have formed. The poisoning is then a chemical one. On the other hand imperfect cooking fails to destroy the organisms, and so the individual is subjected to two influences—the developed alkaloid and the infective or fermentative process in his body. Now it is well known that the tissues, organs, and secretions of some

people are more susceptible to the action of infective organisms than are those of others—"vulnerability," as it is termed—and thus it becomes abundantly clear why the results of implantation of the organisms should vary so extremely in different individuals. Moreover, as regards simple poisoning by animal alkaloids the effects will vary with the dose, with the empty or replete condition of the stomach, and with the rapidity with which the alimentary tract gets rid of the offending matter. Unfortunately, articles of diet—especially meat—which have become charged with animal alkaloids not seldom are free from noxious smell, and thus the warning given by the odour of putrescence is wanting. To avoid dangerous and even fatal consequences the meat should be examined to see that it is quite fresh and free from disease. It should be cooked early and thoroughly, and whilst kept in the raw condition it should be placed in healthy surroundings.—*Lancet*, June 30, 1900.

CLINICAL RECORD.

Foreign.

A CASE OF GOITRE, benefitted by Kali C.

By Dr. G. E. Clark, Minnesota.

Seven years ago a case of goitre, that was unusually large and distressing and had existed for many years, afforded a fine illustration of the deep antipsoric action of this drug. Iodin externally and internally, spongia and other goitre remedies had failed entirely, and now the case was steadily growing larger and more distressing. At the time of the prescription, the patient presented the following symptoms of the vital disturbance which well sets forth the pathogenesis of the remedy.

First: Face of a dirty sallow look.

Second: Swelling of the upper eye lids.

Third: Itching of the nose; nostrils sore inside.

Fourth: Goitre large and hard, worse on right side; affects the voice and respiration, worse lying and during sleep.

Fifth: Numbness of the arms, becomes tired, and aches from slight exertion; had to stop her work as typewriter.

Sixth: Bowels obstinately constipated.

Seventh: Urine scanty.

Eighth: Tires very easily; is melancholy and very irritable.

Kali carbonate reduced the size of the growth and relieved the symptoms to such an extent, that for the last seven years there has been little inconvenience.—*Minneapolis Hom. Magazine*, June, 1900.

CASES BY DR. H. H. READ, M.D.

1. *A Case of Gastrodynia with vomiting of the Ingesta,* cured with Bar. C.

E. B., aged 60 or over, a ruddy stout man of out-door life, was suffering, in Oct. 1894, from vomiting of the ingesta, with pain after eating, extreme emaciation, and weakness. He kept his bed, with a basin always at hand. A year before he had suffered from vomiting of ingesta with loss of ruddy complexion, but *Phos.* had apparently cured him. Now both *Kreas.* and *Kali bich.* failed to relieve. He described his sufferings thus: "My food enters the stomach easily enough, and at first causes no pain, but after two or three hours it feels as if it could not pass when it ought to; then intense pain comes on and the food comes up." I gave him *Baryta carb.* in the sixth centesimal, and to my surprize the symptoms gradually passed away, and when his limbs had regained their strength he resumed his occupation as superintendent of railway freight yards. A year later the same symptoms returned in a milder form, when the use of the same remedy was followed by their disappearance, and at the present date he is as ruddy and stout as ever. I could discover no tumor in the epigastric region.

2. *A Case of Constricting Pain in the Rt. Hypochondrium,* cured with Bar. C.

K., aged 60, at the end of the past year (1899) was attacked with the pain of constriction in the right hypochondrium, less intense than that of gallstone colic, but still very severe, with loss of appetite and color and some weakness. The same remedy (*Bar. c* 6) was prescribed, with the use of farinaceous diet, and at the end of a fortnight the pain passed away, with no return up to date (Feb. 20, 1900).—*Hahnemannian Monthly,* June 1900.

CURE OF A SEVERE CASE OF SCROFULA.

By Dr. Chr. von Hartungen.

Count Z. O., a boy of eight years, of a scrofulous habit of body, has been for years suffering from swollen glands of the neck, and abscesses of the glands, which despite of repeated incisions would not heal up. Simultaneously there were swellings and ulcerations of certain bones of the ankles, with fistulous passages, a swelling of the left elbow-joint with a fistulous canal opening outwardly, a large ichorous abscess on the left leg, and a smaller abscess over the zygomatic process of the right cheek. There were also ulcers of the nose. In spite of repeated operations on the bones under narcosis, and the

use of iodoform bandages, and repeated and prolonged use of the Iodine Springs at Halle, as also of sea-bathing at Abazzia, no cure could be effected. In spite of select animal food and the use of the best old wines, the boy continued to grow more and more emaciated, becoming more irritable and debilitated. He can hardly walk, has an anæmic complexion, headache, spasms of the face, trembling and involuntary twitching of the upper extremities, occasional diarrhœa, cough with stitches in the side and fever.

In this state the young count came under homœopathic treatment and was taken from Vienna to Riva on the Garda Lake in the summer of 1889. The patient was at once relieved of his eight iodoform bandages, was almost daily exposed to a sunbath, followed by a luke-warm douche. He is in the open air, day and night, sleeping with an open window. He is strictly tied down to a diet of milk and vegetables. The patient receives daily two doses of *Calcarea carbonica* 30. Within two months all the fistulous passages were healed up, the swelling of the glands and of the bones disappeared. In two weeks the temperature of the body had become normal; the cough and the stitches in the side disappeared after some doses of *Bryonia alb* 6. The peripheral states of irritation disappeared after *Silicea* 30 and *Belladonna* 15. After six months the boy appeared to be perfectly healed, but he is to remain for the sake of complete bodily restoration for another year in the sub-tropical climate of Riva on the Garda Lake, under medical supervision; his diet during this time will be normal, *i. e.*, a mixed diet. In the fall of 1890 he returned cured to the house of his parents in Vienna and has been in good health from that time till now.—*Homœopathic Recorder*, June 15, 1900, from *Leipziger Pop. Zeitschrift f. Hom.*, March 1900.

GNÆCOLOGICAL CASES BENEFITED BY BELLIS PERENNIS.

Case 1. By Dr. J. Compton Burnett. I sent a lady some Bellis, because, being very far gone in the family way, she found locomotion so very tiresome that a very short walk overcame her. A fortnight or so thereafter I received the following report: "The Bellis did me so much good, I can walk quite well now, and do not get tired or stiff." Here its action was prompt and satisfactory, with no inconvenient side effect or after-effect, *i.e.*, truly specific. Why I did give Bellis in such a case? Merely because the inconvenience complained of was due to mechanical pressure; the tissues were pressed upon, and therefore in a condition precisely like that of a bruise; hence, I

gave my old friend the Daisybruise wort; it acts upon the muscular fibres of the blood-vessels and upon the tissues, and thus clears the line of these mechanical obstructions.

CASE 2. By Dr. L. L. DANFORTH, of New York. I attended a primipara whose labor was normal except that the second stage was unusually painful. The child's head was large, and as it descended and pressed upon the pelvic floor and later upon the perinæum, it caused an unusual degree of distention of the tissues between the margins of the vulvar orifice and the bones on either side. The pain was excruciating, and chloroform was administered. The perinæum was badly torn in spite of the greatest care, but it was immediately repaired and good union obtained. After the usual time the patient began to get up, but convalescence was retarded and walking delayed, indeed was quite impossible for a time on account of the extreme soreness, a bruised sensation referred to the whole pelvis, more particularly of the muscles of the pelvis floor and perinæum. Naturally, arnica was given, but the patient did not improve. Different potencies of arnica were tried in succession, but improvement did not take place. It seemed as if the patient never would be able to walk. I then recalled the suggestion of Dr. Burnett, and gave *Bellis perennis*—five drops of the tincture every three hours—when, *mirable dictu!* the bruised sensation disappeared like magic, and the woman was soon able to walk as well as ever.

I have given the remedy to women who suffered in the latter weeks of pregnancy from soreness of the abdominal walls and of the uterus, with most excellent results, when arnica had been insufficient to accomplish a cure.—*Hanemannian Monthly*, June 1900.

Correspondence.

MALARIA AND COLD ABLUTIONS.

Sir,

I noticed in the number of your Journal for June 1900, in a communicated article, an observation, which is quite contrary to my experience. That "daily ablutions are prejudical to malarious patients, and that they bring on a relapse of fever" are as a matter of fact, only applicable to those patients, who are malaria-stricken, pale and emaciated, with enlargement of liver and spleen, and living in malarious localities. But patients, the first victims of malaria, whose vitality has not been compromised by long residence in malarious localities, do very well with cold water ablutions in places free from

malaria. While I was at Burdwan, as an Epidemic Inspector, when the epidemic fever was raging, I felt after a residence of 3 months, a gnawing sensation in my right leg. I immediately applied for leave for 3 months and it was granted to me. I came down to Calcutta, and 3 days after I had a sharp attack of fever of a malarious character with all its attendant sufferings. The fever was at first of the remittent type for 5 days, and subsequently assumed the intermittent type, when I commenced to take heroic doses of Quinine, which I did for 6 blessed days, and consumed 260 grains of Quinine in all. In spite of this heavy dosage of Quinine the fever returned regularly every day with renewed force—the temperature ranging between 103 and 105. During the fever I took home-made *chapatis* one or two pieces daily, and found that my life was fast ebbing away, and that my mind was also suffering equally with my body. On the 7th day I made up my mind to have cold baths after applying *Fulel* (flower scented) oil upon my head. To give effect to this arrangement, I went down to my village, Mohiaree, in the district of Howrah, and commenced bathing twice daily in my tank, till the fever radically left me on the 4th day, and I began to recruit my health and spirits gradually. You may consider, Mr. Editor, the above process as a desperate one, but I owe my recovery to it. Let me, however, tell you in all seriousness, that this process will not suit those who have contracted a malarious cachexia, and who are pale and anæmic, with entire vital prostration, and who are residing in malarious localities. I have seen patients from malarious localities derive no end of benefit by a change to a better climate, and by cold baths, without taking any medicine whatever. Cold baths have a chilling effect on patients who are greatly reduced in health, but it has a tonic effect on healthy persons. My belief is that cold baths serve to neutralize the effect of Quinine by reducing the temperature of the blood, which I believe, is raised by frequent and large dosage of Quinine, and thus bring about a change salutary to the patient, who gradually gets well of *malaise* and other sufferings which arise from Quinine poisoning, and recovers his health in the course of a fortnight.

Yours &c.
Hurro Nath Roy, L.M.S.

Gleanings from Contemporary Literature.

THE HILL STATIONS OF INDIA AS HEALTH RESORTS.

An Address Delivered to the Balneological and Climatological Society, May 30th, 1900.

By Sir JOSEPH FAYRER, Bart., K.C.S.I., M.D., F.R.S.,

I think I can hardly better fulfil the mandate of your esteemed President, Dr. Ivor Murray, to give an address to this Society than by inviting your attention to those mountain regions which play so important a part in the social and physical economy and well-being of our countrymen in India, and which, under the designation of hill stations, are familiar, by name at least, to all who have any knowledge of the conditions of life in that country.

Possibilities of Acclimatisation.

I propose to consider them, not merely in reference to the treatment of disease and convalescence, but also as resorts in which the European may preserve his health and avoid the physical deterioration which inevitably results from protracted residence in the plains, and where, indeed, it seems even possible that he may take root, thrive and propagate his race, a subject of ever-widening interest to our rapidly-increasing population, and for which there are grounds for belief that the prospects of success are not altogether unfavourable, though so far no conclusive proof is forthcoming. Past history shows, however, that colonisation by the unmixed European race in the plains of India is impracticable. In the very rare instances in which the third generation has been reached it had evidently attained its utmost desirable limits, whilst of the Portuguese who preceded us no descendant unalloyed by native blood can be said to exist.

Physiography of the Indian Peninsula.

Before describing the hill stations let me recall to you briefly some of the physiographical characters of the great peninsula in which they are situated, and the climatic and physical attributes which so largely influence the conditions of European life in India.

The geographical position of British India, part within the torrid, part within the temperate zone, with the Bay of Bengal on the east and the Arabian Sea on the west, its physical characters, comprising lofty mountain ranges rising in the north to the abodes of eternal snow, elevated plateaux and deserts, noble rivers and estuaries, vast plains formed by their basins and deltas, extensive forest tracts, jungles, and swamps invest it with peculiar interest from climatic and hygienic points of view, especially as regards the alien race who now control its destinies and to whom its future development and welfare seem to be committed.

India proper is a vast triangle with its apex at Cape Comorin and its base in the Himalayas. Its extreme length is 1,900 miles, its breadth at the base about 2,000 miles. It is situated between the 66th and 104th meridian of East longitude and the 8th and 35th parallel of North latitude.

It is over 1,250,000 square miles in extent, contained within a coast line of about 4,000 miles and a land boundary of over 5,000 miles. The natural divisions are :

1. The Himalayan and Sub-Himalayan region.
2. The Indo-Gangetic basin and deltas.
3. The peninsula proper formed by the elevated plateau of the Deccan bounded on each side by the Ghauts and the littorals between them and the ocean.

The Himalayan range extends for about 1,750 miles crescentially, N.W. and S.E., with a breadth of from 150 to 250 miles. The mean height is from 16,000 to 20,000 feet, and there are several high points, amongst them Kinchinjunga 28,176 feet, and Everest 29,002 feet, the highest measured peak in the world. The Sub-Himalayan region consists of ranges separated by broad valleys, bounded in part on the south by the Siwalik range and the Terai. It is in the lower ridges of this range of hills, at elevations up to 7,000 feet, that many of the hill stations lie.

The Indo Gangetic plain or Hindostan proper which separates the Himalayas from Southern India, forms the richest and most populous parts of the empire. The great rivers Indus, Ganges, and Brahmaputra water this region and contribute to its formation.

Tropical or Peninsular India is bounded on the north by the Vindhyan system of hills, consisting of various ranges from 1,500 to 4,000 feet, which extend for nearly 800 miles from east to west, and include also the Aravalli, Kaimoor, Satpura, and other ranges. The Eastern Ghauts form rather a descent from the plateau to the littoral than a distinct mountain range. They extend along part of the east coast with an average elevation of 1,500 feet and occasional high peaks, with broad tracts of level ground between them and the ocean. The Western Ghauts extend from near the Tapti river on the west down the coast to Cape Comorin, with an average height about 3,000 feet, ascending to between 4,000 and 5,000 feet, as at Mahableshwar. Between these three ranges the peninsula of India is raised into the plateau of the Deccan. It has an elevation of from 1,000 to 3,000 feet, a region of open valleys and easy slopes, with isolated peaks here and there, and ranges of hills, of which the most important are the Nilgiris, whose highest point is Dodabetta, 8,760 feet.

There are two great slopes of drainage, into the Bay of Bengal on the one side and the Arabian Sea on the other. The Bay of Bengal receives the Ganges, Bramaputra, Mahanaddi, Godavery, Kistna, Cauvery, and others, whilst the Arabian Sea receives the Indus, Nerbudda, Tapti, and some others.

Climate and Seasons.

These geographical and physical characters involve many varieties of climate, and between Northern and Tropical India, according to latitude, elevation, and other physical attributes, every degree of difference in temperature, humidity, or dryness is found.

There are three distinct seasons in India—the hot, the rainy, and the cold—which vary in time of setting in and in duration according to latitude, elevation, and other physical conditions. Approximately the cold

season extends from November to March, the hot from March to June or July, and the rainy from that to October, these seasons being greatly influenced by the monsoons.

The monsoons, which do so much to determine the conditions of climate and health as well as the production of food, are the result of the northern flow of currents of air bearing moisture from the ocean, as the S.W. monsoon, and again their reflux, as the N.W. monsoon, which also brings rain to Southern India. In both cases they are more or less deflected or modified by the physical conditions of the country over which they pass. The S.W. monsoon is the great carrier of rain to the whole of India. Saturated with moisture, it deposits it in the form of heavy rain upon the Western Ghauts, where it first impinges and where the greatest amount falls; but passing over extensive tracts of desert land, it deposits very little rain until further north, when, on impact with the Himalayas a large fall takes place. For example, at Mahableshwar in the Western Ghauts 300 inches of rain fall in the few months of the rainy season; and again, on the N.E. frontier, in that prolongation of the Himalayas into the Aracan Yomas, on the plateau of the Khasia and Jyntea hills, at an elevation of 4,500 to 6,000 feet; at Cherra Poonji, 4,200 feet, the large amount of 600 inches falls, the largest rainfall known in the world; whilst at the corresponding latitude on the west, in the desert of Sind and Rajputana, there is almost no rain, not that the air is not charged with moisture, but that the conditions of condensation do not there exist.

Hill Colonies.

In such a variety of climates and different elevations, with great swamps and deltas on the one hand, and arid, dry, sandy plains on the other, with an almost universal presence of malaria and great solar heat, all those conditions exist which give rise to the well-known forms of tropical disease, render the plains of India unsuitable to be the permanent home of the European, and emphasise the expediency of seeking sites in the more elevated regions where Europeans may find immunity from them. Many such stations have now become health resorts, of which the advantages are very great, not only in preserving the health of those yet unaffected by the climate of the plains, but for invalids who, without being the subjects of organic disease, have suffered from the wearing effects of climate and work, and in some cases for those convalescent from certain tropical diseases, thus obviating the necessity for long and extensive voyages and prolonged absence from duties.

In considering the question of hill stations, it is to be remembered that the welfare of upwards of 100,000 Europeans is concerned. A very large number of these are destined to spend a great part but not the whole of their lives in India, and it is of the utmost importance for the preservation of their health and vigour to utilise those localities in which this object may be to so great an extent attained. The search for an adoption of others and the endeavour to improve by sanitation or by any other means the condition of those now existing, have always seemed to me worthy of

the attention and consideration of all interested in the welfare of the community.

In some of the hill stations, more especially those to the south, at elevations between 4,000 and 7,000 feet, a certain number of Europeans have settled; but sufficient time has not elapsed to show how far this commencement of colonisation may develop and ultimately succeed. For those who have assured means of living and who are not solely dependent upon their professions or labours it seems probable enough that the results may be satisfactory. It also seems possible that the various industries connected with tea, coffee, and cinchona planting and minerals may afford the means of subsistence, notwithstanding the competition of native labour, and so in time European communities of considerable extent may arise and flourish, producing men fitted to cary on work in the plains, returning at intervals to their homes in the more elevated regions. But this remains to be proved.

The great proportion, however, of Europeans who live in India and conduct the commerce, government, and other public affairs would still have to be imported from Europe, and I do not say that the necessity for occasional return to Europe can ever be entirely obviated, for cases must occur in which this will be necessary, not only for recovery from disease or for the re-establishment of perfect health, but for moral and social reasons. Still, I am under the impression that full advantage has never been taken of these hill stations, and it is satisfactory to know that they are capable of considerable extension. I may here express a hope that those who are in a position to do so will endeavour to bring about the realisation of that which would certainly be of benefit to our race in India. I can hardly, indeed, imagine a more profitable subject for the consideration of a Society such as this, whose opinion would carry so much weight.

One obstacle to the progress and success of such colonisation would be found in the limited area of the elevated table-lands and their intersection by deep valleys, but this is not universal. There are regions more promising in this respect—for example, the Khasia and Jyntea Hills, between Bengal and Assam, where the elevated plateaux are broader and more extensive, with undulating ground, at a height that would be favourable to the European constitution. The late Inspector-General Maclelland, an observer of great scientific acumen, in discussing this subject, writes of these hills:

> The elvations, more about the centre of the tablelands, are broad and extensive downs, with favourable soil and plentiful supplies of water, with coal and other resources at hand suitable to the enterprise of Europeans, which seem to leave nothing to be wished for in regard to this locality, but greater facilities of communication in order to render it all to be desired.

In this I thoroughly concur, having known this part of the country, and being much struck with the general character of that between Cherra and Shillong, and its aptitude for this purpose. The greater facilities for communication in these days by rail and steam are gradually diminishing the objections at that time considered to be inseparable from its remote position. He says of another region:

Proceeding from Hazaribagh further to the west, we have a range of high country parallel to the Ganges, presenting fine tablelands at Sohagpore, the elevation of which has been variously stated at from 3,000 to 5,000 feet. Again, in the district of Ramghur, in the Saugor and Nerbudda territories, are high tablelands, which had then been imperfectly explored, but the elevations were known to be from 3,000 to 5,000 feet. Here during the month of May the climate is truly delightful. Everything around is fresh and green, the air is elastic and buoyant, with due falling every night. Fifteen or twenty days seldom pass, even in the dry season, without showers. Again, in the Mahadeo hills is the tableland of Pachmahri, in the Nagpore district, elevated 3,500 feet. The soil is light and sandy.

Of this it was written in 1839 :

In the month of May the climate has been known to be such as to suit the most delicate European constitution, while the cold season is intensely cold and invigorating.

This place has now become a station. The same writer remarks :

A bracing climate, mineral treasures of unexplored value, rich and unappropriated lands, abundance of moisture for all agricultural purposes, beautiful scenery, and a vast variety of products of almost every description, are to be found in these tablelands to which Providence has been so lavish in its gifts, but which man has not yet been taught to appreciate.

Although much has been done since Dr. Maclelland wrote, there is good reason to believe that in the vast mountain ranges and tablelands of India the physical and climatic conditions necessary for the preservation of health and perhaps even for the permanent colonisation of the European will be found to exist to a much greater extent than has hitherto been supposed.

For example, the late Colonel Warburton, who was Superintendent of the Khyber, has recently pointed out Tor Sapper, in the Khyber district, north of Laudi Kotal, and 32 miles west of Peshawar, at an altitude of from 5,300 or 5,600 feet, which is capable of accommodating 1,500 soldiers, and also other elevated regions in the same district with equal advantages, which have all the conditions favourable to European health, and which he strongly recommends.

Hill Stations.

Considering, however, how little was known of the hill climates of India half a century ago, it is interesting to note the number of instances in which they are now resorted to, and to learn what service they have rendered both to the civil and military population. Since the late Sir Ranald Martin urged the attention of Government to the matter, and pointed out the importance of locating the European troops as much as possible at elevated regions, the number of hill sites at which the British army is stationed has greatly increased, and their vital statistics contrast favourably with those of India generally, the death-rates being respectively about 14 and 23 per 1,000 in 1897, an unusually sickly year, the latest officially reported. According to the last report of the Sanitary Commissioner with the Government of India, of the 68,000 European soldiers now in India, there are 3,000 in convalescent depôts and hill sanatoria, and 7,000 are stationed in the hills. I am inclined to think this number might be increased. The facilities of communication are now so much greater than they were, say, at the time of the Mutiny, that there would be little difficulty in getting at them in any sudden emergency.

Time does not permit me to do more than a brief description of a few of the typical hill stations of the Himalayas, of the Ghauts and Vindhyan range, and of those more southern regions where the two systems of the Ghauts unite, forming the great mass of the Nilgiri hills. The chief hill stations of popular resort are in the extra-tropical districts—that is, the Himalayas, Dalhousie, Dharmasala, Marri, Abbottabad, Thandiana, Simla, Missouri, Landour, Ranikhet, Naini Tal, Almorah, Darjeeling, Cherra Punji, Shillong, at heights of from 4,000 to 7,000 feet; in the Nilgiris, Utacamand, Conoor, Wellington, Kotagherri; Pachmarhi, in the Central Provinces; Mount Abu in Southern Rajputana, in the Aravallis; Mahableshwar, Matheran, and Khandalla, in the Western Ghauts, near Bombay. There are several others, but even of those mentioned I can only describe a few, and shall take as sufficiently illustrative of the extra-tropical Darjeeling, Naini Tal, Simla, and Mount Abu; of the tropical, Mahableshwar, Matheran, and the Nilgris, for what is said of those applies to a great extent to the others.

The Tableland of Mahableshwar, latitude 17° 58′ N., longitude 73° 42′ E., in the Western Ghauts, about 290 miles *via* Poona from Bombay, is of considerable extent. Its mean elevation is 4,500 feet above the sea; it is rugged and undulating. It varies from eight to fifteen miles in breadth, and is seventeen miles from N.E. to S.W. The station occupies the north-westerly region of this tableland, having a south-west aspect, and is densely wooded; there are excellent rides and drives. It is composed of basalt, trap, and laterite. The mean annual temperature is 66°, daily range 8°, maximum of summer 89°, ordinary limit of winter cold 40°. The rainfall here, as I have already pointed out, is very great, the average being 229 inches, though frequently more; but the natural drainage rapidly carries off this surplus water. The drinking water is good, the vegetation luxuriant. The headquarters of the Government of Bombay are established in this station, which is naturally the great hill resort from Bombay, as well as from many other parts of India. The elevation and position of this station afford a delightful climate. Malarial fevers do not occur, and cholera is said never to have originated here. The season extends from March to June, and the greatest heat is in March and April, when the thermometer may rise to nearly 90°, but the nights are almost always cool and refreshing. Winds are variable, sometimes from the east, but there is a daily sea breeze, which goes on blowing till the monsoon sets in. Thunderstorms are frequent after April, and in May the atmosphere becomes moister by day, while mist and cloud envelop the hill by night and in the early morning. Early in June the monsoon bursts and the rain falls in deluges, during which time the mean temperature is about 63°. In September the monsoon ceases, and by October the weather has become settled. The change from the heat of the plains now affords great relief; in November the air becomes cooler and drier, weather fine, mean temperature 62°; the greatest cold only produces slight hoar frost. The days are mild and genial, the atmosphere bracing and elastic, and the nights

are cool. The periods both before and after the monsoon are those at which the place is desirable as a residence. The scenery—mountain, sea, and waterfall—is magnificent. Recovery from most maladies, except hepatic, dysenteric, or rheumatic, is accelerated, and to those jaded and exhausted by some forms of disease, long exposure, or hard work, the transition to the greater altitude and more elastic air is often very beneficial.

Mount Abu is in the native State of Rajputana, and is separated from the Aravallis, to which it really belongs, by the valley of the Western Banass River. It is situated in latitude 24° 35′ N., longitude 72° 53′ E., and is about 420 miles from Bombay. Its base is about 50 miles in circumference, and its average height 4,000 feet above sea level. It is very irregular on the surface, and the highest peak is over 5,600 feet above sea level. It is composed of granite, with a mixture of blue slate and quartz. The inhabited part is a basin perforated by ravines, studded with hills, and surrounded by higher eminences, from which gorges descend to the plains. The distant views are very picturesque ; vegetation is luxuriant and semitropical ; a lake about two miles in circumference is found on the western side of the station. The hill sides are well wooded, and at the beginning and termination of the monsoon it has its most charming aspect, green with vegetation and brilliant with flowers, and all the little valleys are filled with clear streams. The mean annual temperature is 70°, the average maximum in summer is 92°, the extreme 98° ; in the winter the temperature is about 50°, but occasionally it freezes at night, and hoar frost covers the ground. The daily temperature is, on the whole, equable, and the station is sheltered from the winter east winds. The rainfall averaged during 10 years 64 inches, August being the most rainy month. It is often enveloped in clouds during the monsoon. Though the summer is warm it is a great contrast to the heat of the burning sandy plains below, and is generally tempered by refreshing breezes, the atmosphere is light and elastic, and the nights cool. It is raised above the hot winds, but is not altogether free from malaria, especially from October to the end of the year. The water is somewhat uncertain in quantity though good in quality. The advantages of this station as a dry, tonic climate, without great vicissitudes of temperature, are considerable, and are much appreciated. It is susceptible of further development, which doubtless will take place as time goes on. It is now the headquarters of the Rajputana Political Agency, one of the Lawrence asylums for European children, and a sanatorium for British troops. It is a great place of resort for those who are exhausted by climatic causes and hard work, and for convalescents after any ordinary maladies, except hepatic and confirmed forms of bowel complaint, or those who have suffered from severe malarial fever, and are liable to recurrences of it.

Matheran (latitude 18° 58′ N., longitude 73° 18′ E.) which rises abruptly from the plain, consists of trap rock and laterite, is very irregular in form, its central ridge is about a mile and a half long and half a mile in breadth,

with spurs which are known by various names. Its proximity to Bombay (only about twenty miles as the crow flies) makes it of great value to that city. It can hardly be dignified by the name of a hill station, but as it illustrates remarkably the advantages of even 2,460 feet of elevation, in its cooler atmosphere, its pleasant breezes and proximity to the sea, it is worthy of mention. The rainfall is heavy, amounting sometimes to 250 inches in the season, when Matheran is not desirable as a residence, but it runs off quickly. In the cold weather, from the middle of October to the beginning of March, the temperature rarely reaches higher than 78° by day and 70° by night, but in March and April it may reach as high as 90 with a mean of 80°. The place appears to be free from malaria. Persons who have suffered from overwork and heat and who are convalescent after illness, other than malarial fevers or hepatic disease, will find it beneficial, and by resorting to it may sometimes avoid the necessity for more prolonged absence and change.

The Nilghiris.—In the south of India, in the Madras Presidency, a tract of mountain country lies between 11° 12′ N. latitude, and 76° 18′ and 77° 15′ E. longitude. These are the Nilgiris, the total area of which is 957 miles, the surface undulating, in some parts not much wooded, and the fall to the plains sudden and abrupt. In other parts of these elevated lands there are extensive forests. The general elevation of the tablelands varies from 6,000 feet to about 7,600 feet. There are several high peaks; Dodabetta, the principal, measures 8,761 feet, In the high lands some European settlers have already established themselves, and there are four European stations: Utacamand, 7,361 feet; Wellington or Jackatalla, almost exclusively military, 6,100 feet; Conoor, 5886 feet; Kotagherri, 6,571 feet. These hill stations are justly in great request, and much frequented. Their elevation in that latitude, their relative proximity to the sea, and the influence over them by the monsoon, produces a climate well suited to the European constitution, in which our race may maintain its healthful vigour and where there is good reason to believe that, other accessories being fabourable, a permanent home for the European race might be, and indeed is, established, though of course time alone can determine in what this attempt at colonisation will result. When compared with the elevated stations of the Himalayas, the distinctions arising out of difference of latitude, proximity to the sea in the one case and to the snowy range in the other, are expressed in the Nilgiris in the greater equability of the climate, neither the heat nor the cold being excessive; whilst the configuration of the country itself, with its long, undulating plains, renders it more suitable to the habits and constitution of the European. Time does not permit of my dwelling upon the physical aspects, and on the magnificent scenery presented by these mountain peaks, undulating plains, and rushing rivers; but let me say a few words about Utacamand, the chief station, and Conoor and Kotagherri, which seem to be so intimately associated with each other, invalids or others frequently finding a sojourn at one of these places a wise preliminary to that at Utacamand; whilst Wellington holds

a high place in the medical annals of the British army, upwards of 1,000 men being in the convalescent depôt there.

Utacamand is situated in an elevated valley or basin surrounded by hills, and has a lake in the centre; there are few trees in its immediate vicinity. From its peculiar geographical position, it feels the influence both of the S.W. and the N.E. monsoon; the rainfall is heavy—according to Hunter 45 inches annually—though it varies in different part of the Nilgiris, the highest fall being in June and July brought by the S.W. monsoon; this is the most unpleasant season. The N.E. monsoon sets in in October, and is also accompanied by rain; the months of November and December are showery, and the latter cold; the atmosphere after that becomes dry. January, February, March, and April are clear, with dry north and east winds. The mean annual temperature is 58°; in the hottest season it seldom exceeds 75°—it may drop at night to 54°—but the mean range seldom exceeds 9°. The hottest month is May, the coldest are December and January, when the freezing point is sometimes but very seldom reached at night. At this time the range between the hottest part of the day and the coldest part of the night is about 16°. In the cold season, in the rarefied air, the sun's rays have great force, and even in this comparatively equable climate it is necessary to guard against sudden changes of temperature. From difference in altitude, locality, and physical characters generally, varieties of climate are within easy access.

Conoor is milder and less subject to these sudden changes of temperature, and therefore more suitable to delicate persons on first going to these hills. The climate generally of the Nilgiris is suitable for all conditions of depressed health, or after disease contracted in the plains, except, as in most other hill climates, those of hepatic or dysenteric nature. Conoor is not so high as Utacamand, but is much more beautiful, as the sides of the hill are wooded. The mean average temperature is 64°, of the summer 70°. It is more relaxing than Utacamand, and in the winter is more sheltered from the north-west, to which the latter is exposed. The waterfalls that occur during the monsoon are most picturesque, one at no great distance being 400 feet. At this elevation the tropical character of the vegetation ceases. Most of these remarks apply to Kotagherri, which is only a little higher than Conoor.

Darjeeling, latitude 27° 2′ N., longitude 88° 18′ E., about 400 miles from Calcutta, and easily and rapidly accessible by rail, is situated in a district of the Sikkim Himalayas, 138 square miles in extent, which was acquired from the Rajah as a sanatorium in 1835. The height of the ridge varies from 6,500 feet to 7,500 feet above sea level. Most of the houses are perched upon this ridge, others are on the side, with a S. W. aspect. Rather more than half-way up is the station of Kurseong at an elevation of about 4,500 feet, where it is sometimes better for Europeans to sojourn for a time before going to the greater elevation of Darjeeling. The geological formation is chiefly micacious shale and gneiss, with granite, sandstone, and slate. The S. W. monsoon produces a heavy rainfall averaging

from 120 to 150 inches in the year. The humidity of the atmosphere is consequently considerable, especially during the fogs and rains of the monsoons. The climate, however, is very equable, in which it differs from other Himalayan stations. Snow falls in the winter to a much less extent than it does at Simla, and the winter is milder. The mean annual temperature is 56°, the maximum in July is 70°, in May 65°, in December 52°, the minima being respectively 59°, 51°, and 36°. The views from the station and the surrounding localities are very fine; the low valleys on the one hand, some with rivers flowing through them, and on the other hand range upon range of snow-clad mountains from 15,000 feet up to 28,000 are exceedingly picturesque and magnificent. The roads are numerous and well kept, sanitation is good, and the water supply fine and sufficient. The flora is very varied—fine trees, such as saul, magnolia, oak, chestnut, toon, coniferæ of all kinds, and rhododendrons, whilst ferns, creepers, and numerous flowers, such as orchilds, abound, and the cinchona plantations—a recent but rapidly-increasing and important industry—not far distant, are most interesting. The climate in March and in May is like that of Europe. During the monsoon the rain is disagreeable, but there are frequent intervals in which the climate is pleasant enough. From October to March the weather is sunny, bright, and cheerful, the nights cold, clear, and sometimes frosty. Darjeeling is the summer residence of the Lieutenant-Governor of Bengal, and is resorted to by numbers, many of whom are planters in the Terai and neighbouring districts.

Though the Terai itself and the valleys are malarious, yet the fever never originates in the station, it being raised above malarious influences, and people from the Terai suffering from fever recover speedily at this station. Whilst diarrhœa is not infrequently found at other Himalayan stations, it is comparatively uncommon at Darjeeling, nor does there seem to be any special tendency to bronchial troubles. As a change, which is so necessary after long residence in the plains, where exhaustion and hard work have deteriorated the general health, and where there is no definite organic disease, and no complication, such as asthma, cardiac or cerebral disease, thought not to do well here, it is of the greatest value as a health resort. Delicate people and young children especially thrive almost as well as they would in Europe.

Naini Tal in Kamaon, in the N.W. Provinces latitude 29° 32′ N., longitude 79° 29′ E., may be described as an amphitheatre surrounded by hills which are 2,000 feet higher except on the S.E., where it is open to the plains. Between the main range and a spur called the Ayapata is a valley with a picturesque lake or *tal*, probably an ancient crater, from which the place takes its name, about one mile long and a quarter of a mile broad. On the slope above this lake the present station is built, and at various elevations. The height of the lake above the sea is 6,4000 feet, and the hills surrounding it rise to 8,500 feet, the ascent from the station being rather precipitous. From some ridges near the station magnificent views of the snowy ranges, including some of the higher peaks, are to be seen, with the intervening valleys and lower ranges gradually leading up to them. The scenery of the station itself and the views of the lake are most picturesque, while the flora is varied, consisting of rhododendrons, cypress, ash, and a variety of flowers and ferns. English vegetables and fruits are also produced in the cold season. The geological formation is clay, slate, and limestone, with light friable soil. In 1881 it was the scene of two serious landships which destroyed many buildings and several lives. This station is the summer resort of the Government of the N.W. Provinces, and consequently is much frequented. The climate is bracing and invigorating except in the rains. The average rainfall is 70 inches, but in some years it is double that amount, and it rains more days in the year

than at other places. During a period of seven years it was recorded that some rain fell in every month except October, but August is usually the wettest month. The temperature in summer rarely exceeds 80°, and in winter it may sink to the freezing point. The maximum and minimum are; in May 78° and 48°, in June 69° and 59°, in July 78° and 61°, in August 76° and 62°. Water is derived from springs and is good, and the sanitation of the place is carefully provided for. In the cold weather invalids and children may be out most of the day, though occasionally snow falls. February and September are said to be most disagreeable months.

This picturesque and beautiful station is very easily accessible by the railway to the hill and thence by good road, and there seems to be ample accommodation for any number of visitors. Those are most benefited who have been debiliated by long residence in the plains or who have suffered from frequent attacks of intermittent fever, or other diseases unattended with organic complications. As is the case with the hill stations generally, it is not so beneficial for hepatic or dysenteric troubles, and it is not free from occasional occurrences of so-called "hill diarrhœa," and indeed from rheumatism and neuralgia, due to its exposure to occasional cold northerly winds. Cases of bronchitis and croupy affections in children are also of occasional occurrence. Persons who suffer from any organic disease, cardiac or other, should not go there without medical authority, and as the transition from the plains to this greater elevation is sudden, delicate persons should not undertake it without the sanction of their medical adviser. There is here a convalescent depôt for European soldiers in which in 1897 there were 123 inmates.

Simla (latitude 31° 6′ N., longitude 77° 11′ E.), in the district of Simla, in the north-east corner of the Punjab, the largest and most important of the Himalayan stations, is on a ridge of the sub-Himalayan system, of a crescentic form, culminating in the east in the peak of Jakko, and in the west in another peak, Prospect Hill. From Jakko the ridge gives off another spur to the north called Elysium, and another to the east called Mahasu; it is, in fact, a series of ridges and spurs upon which the numerous houses are most picturesquely situated, on the north aspect of which is the snowy range, and on the west the plains at a distance of about 40 miles. The area of the whole district, obtained from the Patiala Rajah in the first quarter of the century, is about 18 square miles. It is approached by good roads, but the rail, which already reaches to the foot of the hills will no doubt, as in the case of Darjeeling, be extended nearer to the station. The scenery is very picturesque; to the north the mountain ranges on the other side of the Sutlej valley are covered with dense vegetation, whilst in the distance is the magnificent panorama of the snowy range. The valleys to the north and south are also beautifully wooded, whilst the Kussouli and Sabathu hills, at a lower level, which are military sanatoria, are seen, with the plains of Umbala, extending far in the distance. The hills generally about Simla are well wooded by oak, deodar, and rhododendrous, which are very beautiful. These mountain ridges are composed chiefly of metamorphic rocks, shale and conglomorate, limestone and mica. The average height of the station is 7,100 feet, the fir-clad peak of Jakko rising to 8,000 feet. The average rainfall is 76 inches, but it varies, ranging from 50 to 100 inches, and during the rainy season there is much mist. The mean annual temperature is 60°; in the hot season it frequently attains to 85° or 90°, whilst in the cold it may fall to 22° at night. From the middle of March and in April the mornings and evenings are fresh and cool, the day bright and pleasant. In May it is warm and dry with a temperature from 70° to 80°. In June, the hottest month, the temperature may rise to 90°; in the middle of June there is a certain

amount of rain, but in July the regular rains begin, which continue with intervals till the middle of September. During this period the atmosphere is damp and the station is often enveloped in clouds. Bright and bracing weather follows the rainy season, and in October the air is peculiarly bright and clear and the scenery is then very beautiful. Snow begins to fall in December, increases during January, and sometimes lies deep on the ground. The air is then dry, calm, and bracing, and very agreeable to persons in good health. *Chini*, another ridge, is well known for its dry elastic atmosphere and moderate rainfall, the climate being bracing and healthy like that of Switzerland. Complaints have been made from time to time about the sanitation of Simla and of overcrowding. The water supply is good, having been lately improved. Simla is the summer resort of the Viceregal Court, and is naturally a most popular station, and much frequented, not only during the season but also throughout the winter. The climate is beneficial in ordinary malarial diseases, if unaccompanied by structural changes, but, as in the case of other hill stations, it is specially useful after prolonged residence and hard work in the plains. Like the others, also, it is unsuitable in dysenteric, hepatic, cardiac, or lung complaints. Hill diarrhœa is not infrequently seen and requires special precautions, especially in those who have any tendency to bowel complaints or have just come up from the plains and are more than usually succeptible to alternations of temperature. Children thrive well here, but the question of their remaining during the winter may require consideration. At Sanower, close by, is the Lawrence Asylum for European children. Here also, as at Sabathu and Kussouli, a few Europeans resort. The climate of Simla, in 31° N. latitude, as compared with that of Utacamand in latitude 11° N., at about the same elevation, shows a considerable contrast in its extremes of temperature, both of heat and cold, and the greater equability of the climate is very frequently the reason why the more southern hill stations are preferable to the northern, especially in the case of certain diseases or constitutional peculiarities in which these are important considerations. Such questions can be best determined by medical authority on the spot, but it may be safely said of all, from 4,000 to 8,000 feet, in whatever latitude, that they are of exceeding benefit to Europeans, for here they are placed above those morbific influences which determine the forms of tropical disease and in an atmosphere not too rarified to be prejudicial.

Hill Stations as Health Resorts.

It is also worthy of consideration (and nowhere could this consideration be more appropriately given than by this Society) whether the hill stations of India might not be more resorted to by people from our own islands, when prolonged absence from this country is necessary and residence in a milder and more genial climate sought for. The evils of the winter in England might be avoided by residence in the plains of India or on the plateau of the Deccan, and if necessary that absence should be prolonged, the hot weather in India might be beneficially spent in one of the hill stations.

There are many other hill stations in India, and amongst them might be included the lofy valley of Cashmere, in which all the advantages resulting from altitude, pureness, and rarefaction of air, and removal from the various conditions which give rise to tropical diseases are found. But it is impossible for me in the short time at my disposal to enter into any description of these or other cognate subjects of the greatest interest.

I have endeavoured briefly to indicate certain points with regard to the hill stations of India which I thought might form the subject of profitable consideration in a Society such as this, so eminently qualified to estimate their value and importance, and it only remains for me to apologise for having treated the subject so cursorily.

[The address was illustrated by paintings of the Himalayas by the Right Hon. Sir R. Temple, Bart., late Governor of Bombay; by photographs lent by Mr. Birdwood, C.S.I., Bombay Civil Service; and by photographs and sketches lent by the India Office, and by the Royal Geographical Society.]—*Brit. Med. Journ.*, June 9, 1900.

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THERAPEUTICS AS A SCIENCE.

VIII.

(*Continued from* Vol. xix, No. 7, p. 280.)

GROWTH OF HOMŒOPATHY IN HAHNEMANN'S MIND (concluded).

WE have seen before that by the time (1805) Hahnemann published the *Medicine of Experience*, he had become so convinced of the curative action in disease of medicines which can produce in health symptoms similar to those of the disease, that he thought he would be able to establish the truth of this law better and to the satisfaction of all, if he could show that the facts of cure by similarly-acting medicines have their analogy in the fact that similar diseases, when invading the organism simultaneously or in succession, extinguish each other.

What, in the *Essay on a New Principle*, is a mild, we might almost say a timid hint, becomes in the *Medicine of Experience* a bold sweeping assertion. In the *Essay* Hahnemann wrote: "We should imitate nature, which *sometimes* cures a chronic disease by superadding another, and employ in the (especially chronic) disease we wish to cure, that medicine which is able to produce another very similar artificial disease, and the former will be cured; *similia similibus.*" It will be observed that while he says that nature *sometimes* cures a chronic disease by superadding

another, he does not say whether this "another" is a *similar* or a *dissimilar* disease. He should have been precise and positive as to what he means and not left us to infer that the "another" disease must be a similar one, from what he immediately says as to the medicine to be selected for the cure of a disease being such as "is able to produce a similar artificial disease."

In the *Medicine of Experience,* this vagueness disappears, and Nature's method of cure of one disease by another similar is elevated into a maxim, as we have already seen, viz., "when two abnormal general irritations (of two different diseases) act simultaneously on the body, *if the two be similar,* then the one (the weaker) irritation, together with its effects, will be completely extinguished and *annihilated* by the analogous power of the other (the stronger)." And it is from this that the rule of selecting curative drugs is deduced or inferred as a corollary.

In neither the *Essay on a New Principle* nor in the *Medicine of Experience,* does Hahnemann use the term "law" in reference to the cure of diseases by similarly-acting drugs or by similar diseases. In the former (the *Essay*) when speaking of the cure by drugs he uses the terms "maxim" and "axiom" indifferently; thus, after giving the rule for selecting a drug for curative purposes, that is, a drug which can produce an artificial disease similar to the natural disease, he says: "This *axiom* has, I confess, so much the appearance of a barren, analytical, general formula, that I must hasten to illustrate it synthetically." And then after making some observations on the primary and secondary actions of medicines, &c., he goes on: "After these preliminary observations, I now proceed to illustrate by examples my *maxim,* that in order to discover the true remedial powers of a medicine for chronic diseases, we must look to the specific artificial disease it can develop in the human body, and employ it in a very similar morbid condition of the organism which it is wished to remove." And he continues: "The analogous *maxim,* that in order to cure radically certain chronic diseases, we must search for medicines that can excite a similar disease (the more similar the better) in the human body—will hereby also become evident." Here the term "maxim" is used in the sense of a formula embodying a rule of conduct, and not in the sense of an axiom or an established principle, as ordinarily used.

In the *Medicine of Experience*, our master has used the term maxim in the sense of an axiom, principle or law. Thus he speaks of the facts of two morbid irritations existing in the body either suspending and suppressing, or extinguishing and annihilating each other, according as they are dissimilar or similar, as "maxims of experience." He calls the treatment of diseases by similarly-acting medicines as the positive or curative method of treatment as it only is "conformable to nature," whereas the treatment by oppositely acting medicines or rather by medicines whose primary symptoms are opposite to those of the disease, as the negative or palliative method of treatment.

It was not till three years after, in 1808, in his letter to Hufeland, on the *Necessity of a Regeneration of Medicine*, that he used the term law in reference to the curative actions of medicines. He tells his old dearest friend, the Nestor of medicine in Germany, that after years of research he has discovered the health-bringing way, and that is expressed by the following: "Take the medicines according to the symptoms careful and repeated observation has shown they produce in the healthy body, and administer them in every case of disease that presents a group of symptoms comprised in the array of symptoms the medicine to be employed is capable of producing on the healthy body; thus you will cure the disease surely and easily. Or, in other words, find out which medicine contains most perfectly among the symptoms usually produced by it in the healthy body the sum of the symptoms of the disease before you, and this medicine will effect a certain, permanent and easy cure." And he immediately says: "This *law*, dictated to me by nature herself, I have now followed for many years, without ever having had occasion to have recourse to any one of the ordinary methods of medical practice ..... I practised solely in accordance with the above *law of nature*, and in no single instance did I deviate from it."

This mode of action of similarly-acting medicines, Hahnemann continues to speak of as a *law of nature* in the first edition of the *Organon*, published in 1810, as will be seen from the 20th aphorism which runs thus: "This *eternal universal law of nature* that every disease is annihilated and cured by an artificial disease similar to it which the appropriate remedy has a tendency to produce, depends on the *maxim*: That only one disease can

exist in the body, hence one disease must absolutely yield to another." Here again we find him using two terms, "law" and "maxim," as having the same signification, for here "maxim" must mean an established principle or law of nature, and cannot mean a formula or a rule of practice.

What is called in the first Edition "this universal law of nature," and in the 2nd edition of vol. iii of the *Materia Medica Pura*, published in 1825, "the homœopathic law," is simply somewhat differently stated without any designation in the last (5th) edition (§ 25) of the *Organon* as follows: "Now, in all careful trials, pure experience, the sole and infallible oracle of the healing art, teaches us that actually that medicine which, in its action on the healthy human body, has demonstrated its power of producing the greatest number of symptoms *similar* to those in the case of disease under treatment, does also, in doses of suitable potency and attenuation, rapidly, radically and permanently remove the totality of the symptoms of this morbid state, that is to say, the whole disease present, and change it into health; and that all medicines cure, without exception, those diseases whose symptoms most nearly resemble their own, and leave none of them uncured." And, instead of giving this, according to him, universal fact, any name, he says in the following (26th) section or aphorism: "This depends on the following *Homœopathic law of Nature* which was sometimes, indeed, vaguely surmised but not hitherto fully recognised, and to which is due every real cure that has ever taken: *A weaker dynamic affection is permanently extinguished in the living organism by a stronger one, if the latter (whilst differing in kind) is very similar to the former in its manifestations.*"

Strange confusion again of the terms "law" and "maxim." What is at one time a maxim is a law at another, and vice versâ. It would seem as if Hahnemann did not know his own mind. Or, perhaps, as we suspect, he was anxious to show that the law of drug action in the cure of disease was only part of a higher law which comprehends the mode of cure of natural diseases by drugs as well as the mode of cure of one natural disease by another. This was unfortunate for Homœopathy, as it constrained him to build hypotheses on the slenderest bases which were little better than assumptions.

What is called the homœopathic law of nature in the last edition of the *Organon* is the same as the second maxim of experience in the *Medicine of Experience.* It is based upon the fact but occasionally observed of small-pox extinguishing cowpox, of measles a kind of herpetic eruption. Hence we cannot but look upon this as a mere unnecessary hypothesis elevated into a universal law of nature on the narrowest foundation imaginable. The fact that Hahnemann admitted that there were but very few "helpful homœopathic diseases," scarcely more than three, and the fact that he omitted in the 5th edition of the *Organon* the numerous examples of natural homœopathic cures that he had given in the previous editions, show that he himself was not satisfied with the security of the foundation he thought there was in nature of his "homœopathic law of nature."

We have called this so-called homœopathic law of nature as an unnecessary hypothesis, because the law of the curative action of similarly-acting drugs rests, as Hahnemann repeatedly says, upon "pure experience, the sole and infallible oracle of the healing art."

This hypothesis has led Hahnemann to invent others the validity of which may well be questioned. One of these is that as it is only a *stronger* dynamic affection that can extinguish a similar but weaker affection, therefore "there is no medicinal substance which, when employed in a curative manner, is weaker than the disease for which it is adapted—no morbid irritation for which the medicinal irritation of a positive and extremely analogous nature is not more than a match." (*Medicine of Experience*). This is expressed much more strongly in the *Organon:* "The human body appears to admit of being much more powerfully affected in its health by medicines (partly because we have the regulation of the dose in our power) than by natural morbid stimuli—for natural diseases are cured and overcome by suitable medicines" (§ 30, 5th Edition). Again: "that the morbific noxious agents possess a power of morbidly deranging man's health that is subordinate and conditional, often very conditional; whilst medicinal agents have an absolute unconditional power, *greatly superior* to the former" (§ 33). This reaches its climax in §279 where he says: "the dose of the homœopathically selected remedy can never be prepared so small that it shall not be stronger than the natural disease."

Another hypothesis is that though the action of the artificial morbific forces, that is, of medicines, is stronger than that of the natural morbific forces by which diseases are produced, the duration of that action is shorter.

The reason of both the apparently greater intensity and the shorter duration of the action of medicines as health-disturbers Hahnemann had himself surmised, and is no other than the dose which, according to its size may be made to act strongly or feebly, and, according to its repetition, may be made to act for a longer or a shorter duration. Altogether we think this distinction between natural and artificial morbific forces, is not justified by fact. On the contrary, the great truth discovered by Hahnemann that medicinal substances, even in quantities incredibly minute, develop in the healthy body veritable diseases or disease symptoms, should incline us to believe that probably in a very large majority of cases the causes of disease are no other than material substances diffused in a more or less attenuated form either in the atmosphere, the soil, or the water. On this view Homœopathy has a practical importance which was not even dreamed by its founder.

We have dwelt at some length on these speculations and hypotheses of Hahnemann in order to show that he, who inveighed so much and so justly against the empty speculations and barren hypotheses of his predecessors, was not free from them himself. In his case they were absolutely unnecessary in as much as the law of healing by drugs that he discovered rested upon the solid ground of positive facts observed at the bedside and had no need of the questionable foundation on which he was so anxious to rest it. It would have been infinitely better for Homœopathy if he had cited cases of actual cure instead of manufacturing aphorisms out of dogmatic assertions.

To return to the growth of Homœopathy in Hahnemann's mind. We think we may say with truth that the truly scientific enunciation of the homœopathic law was made in the *Medicine of Experience*, when he declared: "After we have accurately examined the disease to be cured, that is to say, noted down all its appreciable phenomenna *historically and in the order in which they occur*, marking particularly the more severe and troublesome chief symptoms, we have only to oppose to this disease another disease

as like it as possible, or in other words, a medicinal irritation analogous to the existing irritation of the disease, by the employment of a medicine which possesses the power of exciting as nearly as possible all these symptoms, or at all events, the greater number and severest, or most peculiar of them, and *in the same order*,—in order to cure the disease we wish to remove, certainly, quickly, and permanently."

In the *Organon*, he had to modify this somewhat, and though the modification is more convenient and practical, it is doubtful if it is not a departure from strictly pure homœopathy. This modification is with reference to the historical or chronological order of development of symptoms of the natural as well as of the drug disease. In the directions for the examination of the patient for tracing the picture of the disease, and for the employment of the suitable remedy against it no injunction is given to note the order of development of the symptoms of the disease or of the remedy.

It is true that in giving directions for the proving of medicines he speaks of this development of symptoms as in § 130, where he says: "If, at the very commencement, the first dose administered shall have been sufficiently strong, this advantage is gained that the experimenter learns the order of succession of the symptoms and can note down accurately the period at which each occurs, which is very useful in leading to a knowledge of the genius of the medicine, for then the order of the primary actions as also that of the alternating actions is observed in the most unambiguous manner." But it is not always that the very first dose of a medicine produces symptoms. He therefore very properly observed in the next section (131) that—"If, however, in order to ascertain anything at all, the same medicine must be given to the same person to test for several successive days in ever-increasing doses, we thereby learn, no doubt, the various morbid states this medicine is capable of producing in a general manner, but *we do not ascertain their order of succession*; and the subsequent dose often removes, curatively, some one or other of the symptoms caused by the previous dose, or develops in its stead an opposite state; such symptoms should be enclosed in brackets to mark their ambiguity, until subsequent purer experiments show whether they are the reaction of the organism and secondary action or an alternating action of this medicine."

Another difficulty in observing the sequential order of symptoms of a medicine is that it may not have the same order in all provers, and this was noticed by Hahnemann in § 134: "All the symptoms peculiar to a medicine do not appear in one person nor all at once, nor in the same experiment, but some occur in one person chiefly at one time, others again during a second or third trial; in another person some other symptoms appear, but in such a manner that probably some of the phenomena are observed in the fourth, eighth or tenth person which had already appeared in the second, sixth or ninth person, and so forth; moreover they may not recur at the same hour."

This difficulty was noticed so early as 1805 when the *Fragmenta* was published, in the preface to which we find him remarking: "On the healthy body simple (that is uncompounded) medicaments produce effects proper to themselves, each (its own), yet not at the same time or in one and fixed order of succession, or all in each individual, but perhaps these to-day, those to-morrow, this first in Caius that third in Titius, yet so that to Titus may happen at sometime what Caius felt yesterday." Notwithstanding this he did not hesitate, in the *Medicine of Experience* published in the same year almost immediately after, to insist upon the similarity being based upon the order of development of symptoms.

With his extended experience in drug proving he found it impossible to note this order in the large majority of drugs. Hence his modification of his former teaching, and his being satisfied with similarity based upon the totality of symptoms without any reference to their order, as expressed in § 147: "Whichever of these medicines that have been investigated as to their power of altering man's health we find to contain in the symptoms observed from its use *the greatest similarity to the totality of the symptoms* of a given natural disease, this medicine will and must be the most suitable, the most certain *Homœopathic remedy* for the disease; in it is found the specific remedy of this case of disease," because, as he says in the following section, it "affects those very parts and points in the organism now suffering from the natural disease."

The two cases that he published in the first edition of the *Reine Arzneimittellehre* (Materia Medica Pura), in 1817, as illustrative of homœopathic practice, show that he had abandoned

the similarity based on the order of development of symptoms, not long after the publication of the *Medicine of Experience.*

This then represents the final development of Homœopathy in Hahnemann's mind. His theory of Chronic Diseases, which at first sight seems to be a deviation from the homœopathic law thus enunciated by him, is in reality not so. It is, properly understood, but a further and more profound development of that law. However this may be, the individualization of cases of chronic disease is as strictly enjoined by him as individualization of cases of acute idiopathic disease. Thus in § 82 he says: "Although by the discovery of that great source of chronic diseases, as also by the discovery of the specific homœopathic remedies for the psora, medicine has advanced some steps nearer to a knowledge of the nature of the majority of diseases it has to cure, the duty of a careful apprehension of its ascertainable symptoms and characteristics is as indispensable for the Homœopathic physician as it was before that discovery, as no real cure of this or of other diseases can take place without a strict particular treatment (individualization) of each case of disease."

In the selection of antipsoric medicines, individualization is as much enjoined as in the examination of cases of chronic disease. Antipsoric remedies are not to be prescribed at random because they are labelled as such. Their symptoms must agree with the symptoms of the disease in their totality in order that they may be really homœopathic and therefore curative. Hahnemann says this distinctly in his note to the Preface to Alumina *(Chronic Diseases)*: "I am sorry to say the significance of the use of medicines as given in the preface to most of the remedies, and which have been unreliably reported has been now and then misunderstood, having been regarded as determining the choice of remedies in the treatment of diseases (as *indications)*; this they cannot and should not be: they are not names of diseases healed, but only of separate symptoms which, in treating a disease with the specified medicine, were either diminished or removed—*ab usu.* To use them otherwise is a deceptive procedure which we leave now as before to our allopathic step brothers. They are, on the contrary, only to serve to furnish occasionally a little confirmation of the correct choice of the homœopathic remedy, *already found out from their pure*

peculiar medicinal effects, as indicated according to the similarity of symptoms of disease of the special case under consideration."

As regards antipsoric medicines he says—"Only those remedies have been acknowledged as antipsoric whose pure effects on the human health gave a clear indication of their homœopathic use in diseases manifestly psoric, confessedly due to infection; so that with an enlargement of our knowledge of their proper, pure medicinal effects, in time it may be found necessary to include some of our other medicines among the antipsoric remedies."

As regards correspondence of disease and drug Hahnemann was fully aware that this could not be absolute or mathematically exact, as will be evident from what he said in the *Medicine of Experience*. "There is no positive remedy, be it ever so well selected which shall not produce one, at least one slight, unusual suffering, a slight new symptom, during its employment, in very irritable, sensitive patients,—for it is almost impossible that medicine and disease should correspond as accurately in their symptoms as two triangles of equal angles and sides resemble one another." He constitutes this, very nearly in the same words, an aphorism (156) of the *Organon* (5th Edition).

As in the *Medicine of Experience* so in the *Organon* he lays particular stress upon peculiar characteristic symptoms: Thus in § 153 of the *Organon*: "In this search for a homœopathic specific remedy, that is to say, in this comparison of the collective symptoms of known medicines, in order to find among these an artificial morbific agent corresponding by similarity to the disease to be cured, the *more striking, singular, uncommon, and peculiar* (characteristic) signs and symptoms of the case of disease are chiefly and almost solely to be kept in view; for it is *more particularly these that very similar ones in the list of symptoms of the selected medicine must correspond to,* in order to constitute it the most suitable for effecting the cure." He shows his profound knowledge of diseases and drugs when he says: "The more general and undefined symptoms—loss of appetite, headache, debility, restless sleep, discomfort, and so forth, demand but little attention when of that vague and indefinite character, if they cannot be more accurately described, *as symptoms of such a general* nature are observed in almost every disease and from almost every drug."

(To be continued.)

OUGHT THE LECTURE SYSTEM TO BE ABOLISHED FROM MEDICAL SCHOOLS?

The impulse given to the study of medicine in recent times by the creation of the science of bacteriology, the formation of laboratories for various purposes, the transformation of the University of London into a "teaching university," the establishment of universities at Birmingham and in Wales on a wide basis, and the enlargement of the Medical schools at Oxford, Cambridge, Durham and Manchester, has led to manifold suggestions being made for the improvement of the system of medical education, which had hitherto prevailed in England. Among these suggestions the proposal for the abolition of lectures holds a prominent place. This is therefore one of the subjects which ought to claim the attention of all medical journals.

The method of teaching the science of medicine by means of lectures was that adopted by the old Hindus who even professed to have received it as a direct revelation by word of mouth from the Supreme Being himself; in Europe, the lecture system appears to have been first introduced by the ancient Greeks, among whom the works of their countrymen, Hippocrates and Galen, were explained, and their doctrines expounded and illustrated by experienced practitioners of medicine. But when the barbarous tribes of Central Asia overran Europe, and spread rapine and bloodshed all over the land, it was swept away along with all kinds of knowledge. The revival of learning in the Middle Ages brought back the lecture system. In medicine and other practical subjects, mere examination is a very insufficient test of knowledge. Medical students were accordingly required to produce proofs of having attended lectures on the principles and practice of medicine and surgery. Hospitals began also to be gradually attached to medical schools; and medicine was learnt not only from books and lectures but at the bedside of patients also. The subjects included under the term "medicine," began to multiply, and numerous special branches sprung into existence. This led to medicine and surgery being taught on a much wider basis than before; and students were now required to be well-grounded in chemistry, botany, anatomy, physiology and biology before commencing to learn what are strictly called Medicine. To master these subjects thoroughly, it is necessary to study them

both from the theoretical and the practical points of view. Accordingly anatomy was learnt not from books and lectures only, but in the dissecting room; and laboratories were formed for the practical teaching of chemistry, physiology and biology. Botany was taught in gardens especially laid out for the purpose. The practical teaching of pathology at the dead house was found to be a necessity; and the physician's attention was turned to the prevention as well as to the cure of diseases. This has led to bacteriology being added to the numerous subjects to which medical students have to direct their attention, and bacteriological laboratories opened up new paths to original research.

An opinion seems to be recently gaining ground that lectures are of little use, that books are sufficient to impart theoretical knowledge, and that practical work can be learnt in the wards and laboratories and post-mortem rooms. This view of the uselessness of lectures has led many to recommend their abolition. We have therefore found it necessary to examine this subject, and to see whether lectures on medicine and the collateral sciences, which were formerly deemed indispensable, are really so inefficacious and injurious as has been supposed in some quarters. In almost every country of Europe, the sessions of Medical schools used to open with introductory lectures, in which the utility of the healing art, the best method of pursuing it, the important problems of medical education, the profession of medicine as a career, the influence of character on medical practice, and similar subjects, were pointed out, or explained, to its young votaries. About twenty years ago, the authorities of some of the medical schools in England abolished the introductory lectures for reasons best known to themselves, and the Calcutta Medical College followed suit. In July 1884 when we took up this subject, pointed out the advantages of introductory lectures, and referred to the charms which their abolition has taken away, we little thought that the proposal for the abolition of all lectures would be brought forward so soon and create a sensation among medical men. The advocates of this revolutionary proposal represent that the lectures of the majority of professors are dry and uninteresting, and serve to do more harm than good to the students, and that the sooner they are done away with the better—an opinion more applicable perhaps to endowed lectures than to lectures

which have to depend for their continuance upon fees contributed by students.

We do not think this is a correct representation of fact. If a professor is really a master of his subject he is the proper person to present it to the student in the best form for real instruction. What he can exhibit in the course of a brief hour cannot be mastered by a whole day's or even a whole week's reading of text-books. A good lecture, to say the least of it, is the best preliminary to the understanding of text-books. But a good lecture is and ought to be more than this. If it be suggestive, if the matter is duly condensed, if the bearings of one subject with others are properly shown, it cannot fail to rivet the attention of the student, and thus impress upon his mind facts and laws such as no amount of reading can do. We do not deny that some of the masters have proved to be failures as lecturers, but they are the exceptions to the rule. The lecture system ought not to be condemned because of the deficiencies of a few lecturers.

The calling of a lecturer is a very high and onerous one. If he is worthy of his salt he takes care not only of the intellectual side of his pupils but of their moral and emotional nature also. To quote from Professor Tweedy's Introductory lecture delivered in 1883, "no education should be exclusively technical or even intellectual, and certainly not that of a medical man." If a medical student were to confine himself to books alone, however intellectual and painstaking he might be, there would be a great chance of his moral and emotional nature being neglected; he might be able to discharge the ordinary duties of a physician, but would not be so well prepared to carry on those higher duties which have made the profession so noble and elevated. Even the disparagers of lectures admit that professors, who can rouse the enthusiasm of their students, and create an interest in the subjects of their lectures, who can teach how to cultivate our sympathy, our tender and sociable feelings, and all forms of generosity, in fact how to promote all moral improvements, at the same time that they impart to their audience greater knowledge of how to observe and what to observe, they create in them the courage of their convictions, love of truth, devotion to work, and the power of questioning nature in the

right spirit, and are thus the greatest benefactors of our kind and confer inestimable good on society.

The aim, therefore, of all authorities who are vested with the management of medical schools, should be, not to discourage the delivery of lectures, but to raise the standard of qualification of lecturers, to multiply the number of such professors as have done honour to their service, and have not only raised the science of medicine to the high state it has reached, but have trained pupils, who are the flower of their profession, and who have rendered eminent services to the cause of humanity. Such professors England has had the good fortune to possess in pretty large numbers in days gone by, and has good reason to boast of even at the present day. Our own Medical College of this city has had several professors of this character. The names of Bramley, of the O'Shaughnessys, of Falconer, of Griffiths, of Walker, of Fayrer, and of Cutcliffe will be cherished and remembered with love and gratitude, as long as medicine is practised in this country, and their instructions and example would have produced many professors of repute, if the government had not been actuated by an earnest solicitude to exclude Indian physicians and surgeons from the tutorial staff of the Indian Medical Colleges, in direct opposition to the decision of those authorities who organized the first medical institution of this country for teaching the science of medicine in English.

MALARIA AND THE MOSQUITO.

By W. Younan, M.B., C.M. Edin.

So much has been said and written of late on the subject of the relation of the mosquito with malaria that it is probable every school boy has learnt to piously believe that a general crusade against mosquitoes is the duty of every one concerned with the health and well-being of mankind.

To us dwellers of the plains malaria is a household word, and the disease designated by that name is a matter of almost daily experience. But the connection of malaria with the mosquito is a comparatively recent discovery and the latest outcome of bacteriological science. The mosquito is believed to be responsible for the propagation of malaria, inasmuch as it carries malaria-infected blood from one person to another that it feeds

upon, the infection consisting of minute microscopical animal parasites. Such an offence committed by the mosquito is certainly a grave one, but does it deserve the capital punishment that has recently been inflicted on the mosquitoes of Calcutta and its suburbs? I venture to think not. The mosquito is as much a link in the chain of creation as its would be destroyer, and

"In nature's chain one link would you divide,"
Tenth or ten-thousandth, you break the chain alike."

It is well, therefore, to take nature as we find her, and to piously believe that even the meanest thing that lives serves a purpose in nature's divine economy. This apology for the humble mosquito has been prompted by other considerations. Is it, after all, so definitely true that germs are the *cause* of diseases, and that malaria is *caused* by an animal germ which finds access to the blood and which is conveyed to other persons through the medium of the mosquito? There is fortunately a difference of opinion on this subject between the members of the two rival schools of medicine—the allopathic and the homœopathic. Homœopathy teaches that disease *cause* is as invisible, as inscrutable as health *cause*—that the pathological changes in the organism are not the *cause* of disease but its product or accompaniment, and that therefore the mere removal of the latter is not sufficient to *cure* the disease.

As an illustration of this teaching I shall relate one or two cases from my recent practice: A little girl, seven years old, went down with her third attack of ague and fever of a tertian type. From the beginning of her illness she had been taking a quinine mixture, and on the day of my visit a dose was given hourly since the morning as the fever was expected. Notwithstanding this precaution a severe ague came on at 10 A.M. and the temperature rose to 107° F. As I was not available at once cold water sponging was resorted to, and when I called to see the patient the temperature had fallen to 105° F. Taking the history of the case I prescribed Ipecacuanha, administering two globules of the 200th potency at once, and leaving a similar dose to be given when the temperature should fall to normal. No more medicine was required as the fever did not return.

A similar experience was gained in another case shortly after with a single dose of two globules of Nux vomica 200.

I feel certain that if I were a malarial germ I should have a laugh at one or two tiny sugar of milk globules saturated with the 200th potency of Ipecacuanha or Nux vomica that any doctor would throw at me for my destruction. The infinitesimal medicine is never intended to kill germs, for the simple reason that there is no necessity for doing so. It is administered to antidote, by similarity of action, the infinitesimal and invisible cause of disease in the organism. If the so-called germ diseases can be cured—and cured *tuto cito et jucunde*—without the destruction of germs, it follows that germs are not the harmful creatures they are represented to be. They cannot thrive in the blood or tissues if the organism is not *primarily* sick and affords a suitable soil for them. In health immunity from germs is well known and allowed on all hands. When such an immunity is absent, health is likewise absent. Under the circumstances it becomes the duty of the true physician to remove that susceptibility of the organism to germs and other disease influences which constitutes the *primary* factor in so-called zymotic diseases.

In homœopathic Therapeutics we find a very large field for work in this particular direction, and I sincerely believe that outside this system of Therapeutics not much can be effected. These sick susceptibilities are mere indications of deep-seated chronic diseases of the organism, and their treatment has been placed on an efficient basis by the gigantic labours of the Founder of Homœopathy.

Our brethren of the old school will do better by giving up the chase after mosquitoes and flies and the germs they harbour, by recognising as a principle that it is impossible to dislocate man from the lower forms of life in which he lives and moves and has his being, or these from him, and by possessing means simple and efficacious of putting man far above the reach of any harm that can come to him from the lower walks of life.

With uncle Toby, the type of benevolence pictured by an old English writer, we ought to be able to say to the fly or mosquito —"Live gentle creature, there is room in the world for you and me."

EDITOR'S NOTES.

An Institute of Psychical Science in Paris.

A Society has recently been formed for the scientific and experimental study of "psychical phenomena" in France, and as an outcome of this an Institute of Psychical Science has just been established in Paris. The objects of the Institute are stated to be: (1) The installation of laboratories equipped with suitable apparatus (biometers, magnetometers, spectroscopes, registering instruments, photographic apparatus, etc.); (2) the finding and payment of "subjects"; (3) the creation of a periodical which shall publish accounts of the experiments made in the laboratories, and their results, and the writings of collaborators interested in psychical studies. The General Secretary of the new Institute is Dr. Emile Legrand, 14, Rue d'Amsterdam, Paris.—*Brit. Med. Journ.*, July 28, 1900.

Roentgen Rays for the Removal of Hair.

W. A. Pusey (*Journ. Cutan. and Genito-urin. Dis.*, xviii, p. 302, July, 1900) points out how the accidentally-discovered effects of the *x* rays upon the skin and its appendages have been utilised in the treatment of various cutaneous affections. These effects have been (1) epidermal, as seen in the pigmentation of the epidermis, in the blanching and outfall of the hairs, and in trophic changes in the nails; and (2) dermal, as seen in inflammatory changes in the corium and subcutaneous tissues. Schiff and Freund have succeeded in removing undesirable hairs by this means, and Jutassy has reported 40 cases in which there had been no regrowth of the destroyed hairs; and the author has shown that with a very weak but definite current the hairs from an entire area can be successfully removed. The removal is attended by no disagreeable sensations and by no accompanying symptoms beyond at times a slight erythema or pigmentation lasting a short time. It is not nearly so tedious as electrolysis, and can be applied to the hairs of a large surface at one time, and it is particularly adapted to cases in which it is desired to remove down and profuse growth of hair. In mycotic diseases of the hair and hair follicles the first part of the treatment consists in epilation, and this can be done in an ideal way by the *x* rays; further, the rays may do yet more good by their bactericidal action, due either to their direct effect or to the increased phagocytosis which they set up.—*Brit. Med. Journ.*, July 28, 1900.

Gluten-Casein as an Aid to Intestinal Suture.

Katzenstein (*Deut. med. Woch.*, October 12th, 1899) has utilised Buchner's discovery that certain vegetable albumens produce chemiotaxis when applied to serous surfaces in his experiments on dogs. These show that gluten-casein, which is a proteid substance obtained from gum, produces firm adhesions when applied to the peritoneum. After dividing the small intestine transversely, and powdering the cut edges with gluten-casein, the writer joined them with ten to twelve

sutures involving the peritoneal and muscular layers. In every case the wounds were found to be firmly united eight days to six weeks later, and to have contracted fairly extensive adhesions to other parts of the intestine and the omentum. The hydrostatic pressure which the junction would stand without giving way increased after the operation from day to day. Even in rabbits, in which successful suture of divided intestine is extremely difficult, the method gave equally good results. Some control experiments proved that the same number of sutures were insufficient to completely seal the intestine without the aid of gluten-casein. Since the cut surfaces of the intestine, however closely sutured, unite by the adhesion of the peritoneal surfaces, and give way only because adhesions do not form sufficiently rapidly and closely, it is possible that the artificial local peritonitis produced by gluten-casein may prove of value in operations on the intestines of man.—*Brit. Med. Journ.*, July 21, 1900.

Epilepsy Cured by an Attack of Hemiplegia.

D. Brunet (*Arch. de Neurol.*, March, 1900) publishes the following case. Usually cerebral lesions which result in hemiplegia are followed by epileptiform troubles or by choreiform and athetoid disturbances; but the reverse—namely, the arrest (or cure?) of epileptic seizures by the occurrence of hemiplegia is novel. The case is that of a woman born in 1812, single, uneducated, an inmate of la Charité since March 1857. She was epileptic since the age of 7 years, the first convulsive attack following scarlet fever. The attacks took place once every month or fortnight, and were followed by delusions and visual hallucinations of men assailing or attempting to kill her. In 1857 she had an attack of incomplete left hemiplegia following violent convulsive attacks. Thereafter the fits which she used to suffer from gradually diminished in severity, and in 1860 she was entirely free from fits. There was complete freedom from fits for seventeen years till her death in 1877. During this time her intelligence was almost normal; she could walk and could use her hands in needlework, though the left leg and arm were rather weak, and her disposition and character were quiet and orderly. She only suffered from occasional lassitude or from headaches, her habits were clean, and she never wetted her bed as patients in asylums not uncommonly do. No explanation can be offered to account satisfactorily for the complete disappearance of her epileptic attacks. A necropsy was not obtained in this case, but it is believed that cerebral hæmorrhage was the immediate cause of the attack of hemiplegia.—*Brit. Med. Journ.*, July 28, 1900.

The Chemistry of Soot.

There is a very general impression prevailing that soot is simply carbon, but chemists have long known that though carbon is its chief constituent yet there are present other elements, amongst which hydrogen and nitrogen may be counted as of some importance. Indeed, it has been stated that soot is an impure hydrocarbon containing a very large proportion of carbon relatively to the amount of hydrogen. Soot

possesses some peculiar properties. As everybody knows, the fact of the very characteristic and so-called smell of soot being in a domestic apartment generally portends wet weather or it may occur simultaneously with the onset of hot weather. It is probable that a reduction in the height of the barometer and an increased amount of moisture in the air are conditions which combine to expel a substance from the soot of our chimneys the peculiar smell of which is so noticeable in the room. The smell suggests ammoniacal compounds, and we are not surprised to find that a recent analysis has shown that soot contains no less than 7·4 per cent. of ammonium salts. This fact amply accounts for the value placed on soot for agricultural purposes. Again, it may be remarked that soot on burning in a more or less confined area (as in the case of a chimney on fire) evolves a characteristically persistent and most nauseous smell. This peculiar characteristic is likely enough due to the presence of nitrogenous organic compounds. Needless to add it is very probable that partly on this account the horrible fumes emitted from a chimney on fire are intensely poisonous; and on this ground alone punishment should be severely dealt out to the person who allows this disgusting pollution of the air to take place.—*Lancet*, July 21, 1900.

The Muscular Affections of Gonorrhœa.

Braquehaye and Servel lately contributed an article on the subject of gonorrhœal myositis, and Servel now publishes further observations (*These de Bordeaux*, 1900), which go to show that lesions of the muscles are very much more frequent in this disease than has been supposed. In a slight degree the muscular affection may constitute a merely myalgia, but in more severe forms actual inflammation is present constituting myositis. This is much more common among men than women, and the important cause seems to be some severe muscular effort. It may be several weeks after the infection, or by relapse to an acute condition in an old-standing case that the attention of the patient is drawn to some part by severe muscular pain. Three weeks is generally speaking the average period for such to appear. As a rule there is little else than pain, and physical examination of the part may reveal nothing, there being no redness, swelling, or œdema. In other cases the slightest touch may demonstrate considerable tenderness sufficient to make the patient cry out, and at the same time it may be noticed that the muscle contracts irritably. Sometimes the patient assumes various attitudes to obviate the severity of his suffering. The general condition is as a rule good, but in the more severe cases there may be some more temperature—that is to say, than in those properly called myositis. In these cases there may be marked swelling of the muscles, and palpation becomes intolerable. The swelling is hard, non-fluctuating, and merges insensibly with the mass of the muscle affected. This swelling is unconnected with the skin, and may be moved with the muscle. Even in severe cases œdema and glandular swelling are uncommon. Prognosis generally speaking is good, subsidence being the rule, whereas in other forms of myositis suppuration is not uncommon, and even should this

not occur there is generally some alteration, fibroid or otherwise, of the muscle, none of which occur in the gonorrhœal form. The duration of the disease extends over some days, ten at the very utmost. The treatment consists in sedative application and wrapping up the affected part. Hot douching is extremely good.—*Brit. Med. Journ.*, July 28, 1900.

Extraordinary Impulses towards Auto-Mutilation.

Berillon reported at a recent meeting of the Société d'Hypnologie et de Psychologie (*Rev. Neurol.*, February, 1900) the case of a man aged 31 years, who was the subject of impulses of a dangerous and determined character towards self-mutilation. One morning, shortly after rising, he was seized with an irresistible impulse, and struck his head with a hatchet so as to bleed copiously. On another occasion he attempted to tear out his right eyeball, and as this did not succeed he had recourse to a knife for the purpose, and, later, he extracted several of his teeth one by one with pincers. One day he seized hold of his genitals with both hands and pulled at them forcibly so as to tear them out; and at times he would thrust his hand into the interior of his throat, which he would pull and dig till it bled. He once put out his tongue, and, closing his teeth over it, struck himself a violent blow upwards on the lower jaw so as to cause the tongue to be bitten through. While he was in the act of performing these mutilations the patient experienced no suffering, and seemed to be gratified when he had succeeded in accomplishing what he desired. These attacks or crises were never accompanied by loss of consciousness, nor by foaming of the mouth, nor involuntary micturition. They were acts reproducing in reality the material of dreams during the night immediately preceding such acts. This patient was subjected to hypnotic treatment. On the morning of January 16th, 1900, he once more had ideas of auto-mutilation, but his hands having been paralysed by hypnotic suggestion, he was not able to give effect to his impulses for self-destruction. The patient had become an object of scandal and notoriety in his district, and was regarded with horror by his fellow citizens. M. Berillon expressed his hope that with a continuance of the treatment he is undergoing there were hopes of his ultimate definite cure.—*Brit. Med. Journ.*, July 21, 1900.

Pathology of Plague.

Zabolotony (*Arch. des Scien. Biolog.*, T. viii, No. 1) has had the opportunity of studying plague in Bombay, in Arabia, and in the district of Weytcharge in Mongolia, where it has been endemic for ten years. He gives detailed account of his observations, dwelling specially on the cases that came under his care in the last locality. Here the disease appears in June, and subsides towards September; of 16 cases, 7 were of the pneumonic, 9 of the bubonic, type. Ten of these were treated with Roux's serum, 6 died, and 4 recovered. The pustular form described by several authors did not come under his observation. In the bubonic or Levantine type the virus probably enters through some solution of continuity in the epidermis, and the primary bubo

is formed in the nearest lymph glands. A case is cited where the point of entrance was furnished by an ulcer on the breast, and the author also relates how in extracting the contents of a bubo with a syringe he had the misfortune to prick his finger; this was followed by pain in the forearm, rise of temperature, and *malaise*. He injected 60 c.cm. of serum, and the symptoms subsided. In the pneumonic form of the disease the virus enters by the nose or mouth; the mortality is higher than in the bubonic cases, and should the bacillus find its way into the general circulation in either form, death usually follows within twenty-four hours. In all cases examination of the blood shows a leucocytosis, and after a certain period it acquires agglutinative properties. This last characteristic appears at the end of the first weeks, and is absent during the early days, so that it is useless as a diagnostic sign. During convalescence the blood is antitoxic. An attack of the disease confers immunity, and recurrence is rare. This immunity is much more certain than that conferred by the injection of serum or of dead cultures (Haffkine's method). Zabolotony thinks the serum of Roux preferable to Haffkine's prophylactic; it must be of standard strength estimated by testing its antitoxic power on animals. The preventive dose is from 25 to 40 c.cm., but as a curative agent the amount must be larger, from 50 to 100 c.cm. The essence of the process of recovery is the phagocytic activity of the leucocytes, and it is by stimulating and exciting this that the serum acts.—*Brit. Med. Journ.*, July 28, 1900.

Suicide in Prussia.

In the *Monatsschrift für Psychiatrie und Neurologie* for June an analysis is given of the statistics relating to suicide in the year 1897 contained in the report of the Prussian Royal Statistical Bureau of 1899. The total number of suicides in that year in Prussia was 6,496, of whom 5,117 were men and 1,379 women. This gives a proportion of 3 men to 1 woman, which corresponds with the figures for mid-Europe generally. Of the several provinces of Prussia, Silesia heads the list with 1,078 cases, Posen standing last with 141, with the exception of Hohenzollern, which has only 14. As regards the modes of self-destruction, hanging was chosen by 3,184 men and 610 women. Next came shooting, by means of which 806 men shuffled off this mortal coil. Drowning found favour with 521 women, while poison claimed 244 victims (141 men, 103 women). It is noteworthy that neither throat-cutting nor any other method of using the razor or the knife is mentioned. Suicide is more common in summer than in winter, the number from April to September having been 3,719, against 2720 from October to March. Among the causes of suicide mental diseases took the first place, 1,881 persons (1,300 men and 581 women) being recognised lunatics. It is probable also that among the remainder there may have been many cases of latent mental disease. As regards religious creed, the Evangelicals head the list with 5,105, the Catholics come next *longo intervallo* with 1,078, the Jews standing lowest in the list with 102. As regards age, in four cases the self destroyers were under the age of 10, all

boys; and 61 were over the age of 80. In both sexes the average age was between 40 and 50. This is somewhat different from the common experience as regards women, which is that in them the greatest tendency to suicide is between 20 and 30. In the Prussian army, including the marines, the number of suicides was 197. In most cases the mode of death was by shooting: next came hanging; and, thirdly, drowning. In the army, as opposed to the general experience of civil life, suicide is more common in the winter than in the summer. As regards motive, fear of punishment was assigned as the cause in 65 cases and mental disease in 31.—*Brit. Med. Journ.*, July 28, 1900.

The X Rays in Surgery.

The *American Journal of Medical Sciences* for July contains the report of the Committee of the American Surgical Association on the medico-legal relations of the *x* rays. After reviewing the evidence available on the subject, the Committee came to the following conclusions: (1) The routine employment of the *x* ray in cases of fracture is not at present of sufficient definite advantage to justify the teaching that it should be used in every case. If the surgeon is in doubt as to his diagnosis he should make use of this, as of every other available means, to add to his knowledge of the case, but even then he should not forget the grave possibilities of misinterpretation. There is evidence that in competent hands plates may be made that will fail to reveal the presence of existing fractures, or will appear to show a fracture that does not exist. (2) In the regions of the base of the skull, the spine, the pelvis, and the hips, the *x* ray results have not as yet been thoroughly satisfactory, although good skiagraphs have been made of lesions in the last three localities. On account of the rarity of such skiagraphs of these parts special caution should be observed, when they are affected, in basing upon *x*-ray testimony any important diagnosis or line of treatment. (3) As to questions of deformity, skiagraphs alone, without expert surgical interpretation, are generally useless, and frequently misleading. . The appearance of deformity may be produced in any normal bone, and existing deformity may be grossly exaggerated. (4) It is not possible to distinguish after recent fractures between cases in which perfectly satisfactory callus has formed and cases which will go on to non-union. Neither can fibrous union be distinguished from union by callus in which lime salts have not yet been deposited. There is abundant evidence to show that the use of the *x* ray in these cases should be regarded as merely the adjunct to other surgical methods, and that its testimony is especially fallible. (5) The evidence as to *x* ray burns seems to show that in the majority of cases they are certainly and easily preventable. The essential cause is still a matter of dispute. It seems not unlikely, when the strange susceptibilities due to idiosyncrasy are remembered, that in a small number of cases it may make a given individual especially liable to this form of injury. (6) In the recognition of foreign bodies the skiagraph is of the very greatest value; in their localization it has occasionally failed. The mistakes recorded in

the former case should easily have been avoided; in the latter they are becoming less and less frequent, and by the employment of accurate mathematical methods can probably in time be eliminated. In the meanwhile, however, the surgeon who bases an important operation on the localisation of a foreign body buried in the tissues should remember the possibility of error that still exists. (7) It has not seemed worth while to attempt a review of the situation from the strictly legal stand point. It would vary in different States and with different judges to interpret the law. The evidence shows, however, that in many places, and under many differing circumstances the skiagraph will undoubtedly be a factor in medico-legal cases. (8) The technicalities of its production, the manipulation of the apparatus, etc., are already in the hands of specialists, and with that subject also it has not seemed worth while to deal. But it is earnestly recommended that the surgeon should so familiarise himself with the appearance of skiagraphs, with their distortions, with the relative value of their shadows and outlines, as to be himself the judge of their teachings, and not depend upon the interpretation of others who may lack the wide experience with surgical injury and diseases necessary for the correct reading of these pictures. These conclusions were unanimously adopted as expressing the views of the American Surgical Association.—*Brit. Med.. Journ.*, July 21, 1900.

The Electric Light in Rheumatic Affections.

Moubinoff (*Vratch*, No. 6, 1900), after experiencing in his own person the favourable effect of the electric light in acute rheumatism, began in 1897 a series of clinical experiments with that agent. In the majority of cases he used the electric arc of 20 to 25 ampéres and 50 to 60 volts. The light was reflected by a parabolic mirror, and the action of the heat rays was sometimes suspended. Without committing himself to a definitive judgment as to the therapeutic effect of the electric light, the author provisionally formulates the following conclusions: (1) the temperature of the light of the electric arc (20 ampéres) reflected by a parabolic mirror is in direct ratio to the distance. Thus at a distance of 125 cm. from the source of the light it is of 110° C., whilst at a distance of 4 metres it is only 24.2° C. (2) The light (with or without heat rays) acts not only on the superficial layers of the integuments, but on the deep-lying tissues. (3) The pencil of light having traversed a living tissue decomposes bromide of silver on a luminous plate. (4) The action on a luminous plate coated with gelatine bromide does not belong exclusively to the blue-violet rays of the spectrum but equally to the others. (5) The light pencil having traversed a living tissue acts on the gelatine bromide plate with greater rapidity and intensity the thinner the tissue and the more concentrated the rays. (6) The brilliancy of the light pencil (in its entirety, not the so-called chemical rays alone) after traversing a living tissue is considerably less than that of a pencil which is on the point of entering a tissue—a fact which is obviously due to the thickness and physical properties of the tissue. (7) To obtain the therapeutic effect the light pencil

must be used in its entirety without exclusion of the heat rays where this is possible. (8) The light of the electric arc directed on a given portion of skin induces hyperæmia of an intensity proportional to the nearness and intensity of the source of the light; in some cases hyperæmia is produced even when the light rays have been suppressed. The hyperæmia is produced more rapidly and is more intense when the light falls on the skin perpendicularly than when the direction of the pencil is oblique. (9) Besides hyperæmia the light produces sweating at its point of action. When the temperature of the light rays is high the sweating is profuse, and if the action of the light is prolonged sweating often becomes general. (10) On whatever part of the body the pencil, with or without heat rays, is directed a modification in the pulse wave is noticed. (11) After some hours of application of the electric light general fatigue and drowsiness are observed in most cases; less frequently there is more or less pronounced excitement. (12) As regards the therapeutic action of the light a diminution, or even disappearance, of the pain is noticed from the first. This effect persists for a period varying from a few hours to two days. If the treatment is prolonged the pain permanently ceases. (13) Under the influence of the electric rays the articular exudations which are present in rheumatic affections and in serous affections of the pleura disappear. The same thing takes place in the œdema of gouty affections. Relapse, however, sometimes occurs. (14) The electric light has certain influence in reducing temperature. The light of the electric arc (20 to 25 ampéres and 50 to 60 volts) is sufficient to cure affections of rheumatic character and certain diseases of the skin. The author thinks that the electric light will unquestionably occupy an important place in the therapeutic arsenal. At present, however, it must be used with precaution, as it is not altogether free from danger. A. G. Minime (*Ibid.*, March 11th, 23) reports several cases in which he employed a 16 candle-power incandescent light in the treatment of joint affection—such as acute articular rheumatism, acute synovitis, etc.—and also in hæmatomata, torticollis, and neuralgia. He uses a combination of massage and illumination of the part. Absorption of large hæmatomata was effected in three sittings. Small effusions of blood were absorbed after fifteen or twenty minutes' treatment. In a case of acute traumatic synovitis of the elbow, the effusion disappeared in seven sittings. Ivanoff has devised a special lamp which is a combination massage roller and electric lamp.—*Brit. Med. Journ.*, July 21, 1900.

A Forgotten Physiognomist.

At the present time the study of physiognomy has dropped so much out of sight that we are apt to forget the exaggerated importance that was attached to it in the distant past. The first student of physiognomy on record is Aristotle, who invented the term to designate the art of discerning character in man by means of the feature of the face. Cicero was a notable physiognomist, but it was not until the dark ages began to be illuminated that the subject attracted popular attention, enlisting numerous exponents. In the eighteenth century

Le Cat and Pernethy both produced elaborate essays on the subject, inaugurating the system which is at present followed, but the best known authority during this period is Lavater who was led to undertake "the study of Physionomies" by "the turn of the neck" in a soldier who happened to pass by a window where the "citizen of Zürich" was standing with his friend "Mr. Zimmerman, physician to his Britannick Majesty of Hanover." Lavater informs us that he "began oftener than once to study the authors who have written on Physiognomy, but was soon disgusted with their verbose jargon ....:... most of them chiefly pilfered from Aristotle." There is, nevertheless, an earlier physiognomist whose work, whatever may be the verdict as to verbosity, is certainly not jargon. Long buried in oblivion, this remarkable volume, which bears the date of 1615, was brought once more to light a year or two since by Professor Mantovani of Bergamo. The name of the forgotten author is Samuel Fuchsius, but whether or not he was a relation or descendant of the celebrated botanist is uncertain. On his title-page he informs us that it is his purpose to treat of the "symptomatic values of the forehead and eyes in determining the characters as well as the intellectual and affective aptitudes of men." Besides an introduction the treatise comprises 34 chapters, of which 15 are devoted to metoposcopy and 19 to ophthalmoscopy, both divisions being profusely illustrated by portraits, plates and diagrams in the most approved style of the period. "I expose," says Fuchsius in his exordium, "if not perfectly at least to the best of my ability and in all honesty, the substance of physiognomy: if many bewail the sad fates of Cato and of Cæsar, the victims of adversity, how much more rational would it not be to explore the destinies of our own contemporaries and to foresee with quasi-divine prescience how much of criminality and how much of rectitude each one of us bears within him? You may, O Mortals! entrench your voices behind the double rampart of your lips and teeth, but for all that your foreheads and your eyes will continue to afford an infallible means of detecting your inmost thoughts in all their bareness, devoid of all the disguises of fiction." Before entering into details Fuchsius at considerable length, and exhibiting a quaint mixture of determinism and pessimism, maintains that since all qualities, good, bad, or indifferent, are part and parcel of human nature it follows that the means of giving outward and visible expression to those he possesses must necessarily exist somewhere in each individual's body. Then taking his examples from among the sculptured effigies of historic personages he proceeds to substantiate with more or less success the correctness

of his theory. Foreheads he divides in the first place into large and small. "A small forehead is the index of a small, narrow, feminine mind, and rarely will the owner of such an one be found endowed with the qualities which conduct to the temple of glory and renown: he will be irascible, curious, prone to avenge himself, and credulous of falsehoods and old wives' tales." Next the author passes in review a whole regiment of foreheads of different shapes and sizes—long, broad, low, round, square, projecting, retreating, &c. Criminals with ambitious proclivities, such as assassins and highway robbers, have narrow foreheads; in fact, it is in people of this description that the minimum diameter is to be met with. A low-type forehead shown in one of the illustrations is remarkable as presenting an almost complete collection of the modern stigmata of degeneracy; and equally worthy of observation it is that Samuel Fuchsius in the seventeenth century should have regarded a profusion of coarse hair as usually associated with a feeble or disordered intellect. Among many other interesting points commented upon in the first part of the book the wrinkles in the foreheads of melancholiacs and also in those of the newly-born children of elderly parents may be mentioned. In the second part, under the head of Ophthalmoscopy, Fuchsius again displays wonderful perspicacity. More even than the forehead, he says, the eye is capable of betraying the most delicate play of passion in the human mind, as well as of indicating with the utmost preciseness the degree of intelligence which the individual possesses. In considering the eye we should take note of its accessory in addition to its essential parts. Heavy eyebrows are an attribute of robbers, liars, and homicides. When straightly drawn they denote sadness; if arched, arrogance; if bent inwards towards the root of the nose, austerity. Large eyes reveal laziness; small eyes are found in cowards and misers. An episcleral circle marks premature senility; strabismus is often the outward sign of partial amentia; while pigmentary anomalies in the iris betoken eccentricity and imbecility. "Eyes which are apt to tremble and be convulsed upwards indicate the sacred disorder, but are likewise a characteristic of cruel men, of murderers, and of all persons possessed by malignant spirits." The passions and affections without exceptions, have their indices in the human eye. The descriptive list supplied by Samuel Fuchsius is admirably conceived and executed, but its great length renders it exclusory.—*Lancet*, July 21, 1900.

The "Light Treatment."

Mr. Malcolm Morris has had under treatment by the Finsen electric-light method for more than two months several exceptionally severe cases of lupus vulgaris, and on Saturday afternoon last, June 30th, was able to give a very successful demonstration of the method to a number of medical men interested in the new departure. The premises which Mr. Morris has secured for the purpose of carrying out the "light treatment" are situated at 1A, Berkeley-gardens, Campden-hill, and are fitted up with every requisite for applying the new method. The particular apparatus used at 1A, Berkeley-gardens, was procured by Mr. Morris from Copenhagen and has been in this country for nearly two years, but circumstances have prevented the apparatus being put into systematic use until some months ago. The apparatus required for the treatment by means of artificial light consists of three portions. First, a powerful electric arc lamp is needed of from 55 to 75 ampères current; secondly, means must be provided for cooling the light; and, thirdly, it is essential that the operators should be able readily to concentrate the light in a suitable manner. The electric arc lamp is employed because it is found that its light is not only rich in chemical rays but is also less endowed with heat rays than ordinary sunlight. Further, in this country it is not possible to depend on a regular supply of sunlight which may, however, when available, be substituted for electric light with some necessary variation in the apparatus. For purposes of treatment the light is too hot and it is therefore passed through a form of telescope fitted with lenses of crystal and with distilled water for the purpose of absorbing the heat rays. Jackets of cold water are also so arranged that any chance of complications from the action of heat is avoided. Inasmuch as only a small portion of the diseased surface can be treated at one sitting provision is made for concentrating the light on a small spot a little larger than a florin. To those watching this process carried out it seemed that the attendants manipulated a patient with a view rather of bringing the part to be treated into focus than of focussing the light itself on to the desired place. Though naturally pleased with the favourable course taken in the cases of lupus vulgaris submitted to this treatment Mr. Morris very clearly pointed out to those present that the whole subject must be considered in a tentative way only and they must not allow themselves to make exaggerated statements about curing lupus, though of course the procedure was very satisfactory in many ways. It could be fairly said from the cases demonstrated by Mr. Morris that the method was painless, that no

anæsthetic was required, and that there was nothing in it to frighten or repel a patient. Put very briefly a medical man could safely assert that given a powerful electric arc light, with suitable telescopes fixed at the right distance so as to concentrate the light properly cooled on to the patient's skin as he lies on a couch (if the situation of the lupus was convenient for focussing), the results would be in a large proportion of cases exceedingly satisfactory. The drawbacks are that the treatment is a tedious operation, the patient requiring very long and frequent exposure to the light, and that the longer the treatment the less power the light has of piercing the tissues in any particular case. In fact, there seem to be three factors specially detrimental to the success of this method: scar tissue, blood, and pigmentation. Mr. Morris does not appear to accept the theory that the chemical rays act in a remedial manner entirely by their bactericidal power, but space does not permit of discussing this point. The curative agency of these chemical rays does not seem to be confined to lupus vulgaris, for Mr. Morris showed a case of lupus erythematosus in which great improvement had resulted, and he also exhibited a typical case of rodent ulcer in which the hardness had disappeared, leaving only a superficial healing ulcer. The success of the demonstration was added to by some interesting remarks from Dr. A. Barry Blacker and Dr. F. Harrison Low. Mr. Morris was helped by Mr. S. E. Dore, his clinical assistant at St. Mary's Hospital, in carrying out the method of treatment.—*Lancet*, July 7, 1900.

CLINICAL RECORD.

Foreign.

CHRONIC FACIAL NEURALGIA.

By H. S. Budd, M.D.

Mrs.——, of Kansas City, Mo., 44 years of age, married 10 years, has had three children. Has suffered from uterine anteversion since childhood. Anæmic; spare, nervous temperament. For three years past has suffered from neuralgia. Attacks occur usually on Friday or Saturday and last till Monday or Tuesday; but are brought on at any time by high winds, damp weather or an approaching storm. Nothing would relieve the pain during an attack; even 15 grs. of *Ammonol* and 7½ of *Phenacetin*, or 20 grains of *Antikamnia*, failed to alleviate. *Passiflora inc.* sometimes allowed her to sleep, but not always.

She wrote to me May 11th, saying: "The pain is worse—after hard work; during a high wind; after more than one day's rain; in very cold weather; from hot applications; during any movement. *Passiflora* alone relieves the intense soreness extending all over the right half of the head. Cannot rest on the pillow nor endure even the lightest hair-pins when the pain and soreness is worst. Always suffer worse at night. *Intensely* nervous and hysterical at being *touched*, even by accident. During the pain there is greatly increased activity of the kidneys and stops when the pain goes. Pain greatest in right lower jaw. Sometimes relieved for an hour or so by chewing gum or eating." The lady is also particularly afraid of thunder, which—together with the above—led me to think of *Rhododendron*. She also "omits entire words when writing." On the whole, it seemed a pretty fair picture of *Rhod.*, so I sent a powder of the 15x potency to be dissolved in ʒiv of water and a teaspoonful taken every hour until decided aggravation or amelioration was noticed.

May 21st she wrote that she took four doses the preceding evening and stopped, as *each dose* aggravated at once. The next morning the pain stopped suddenly and did not return. Some days later she wrote that it was "like being out of prison," for she was "so free from pain she forgot she had ever suffered." I then sent one dose of *Rhod.* m., to be taken if there should be a return of the symptoms. June 7th there was a premonitory twinge or so, and she took the powder, and is now apparently immune.—*Homœopathic Recorder*, July 15, 1900.

THIOSINAMINE.

By C. A. Pennoyer, M.D., Kenosha, Wis.

Attention was called incidentally, in a paper presented to Wisconsin Homœopathic Society last year, to the action of this remedy upon cicatricial tissue. An interesting case showing a remarkable coincidence of relief of stricture of the rectum following the use of thiosinamine will be briefly presented.

Mrs. C., aged 69, came to the Sanitarium, September 10, 1897, with the accompanying symptoms: Has had gastric distress for several years; also sciatica for a year or longer. Pain through hips and down into knees; worse with motion. Extremities cold, while warm throughout the body. Has indigestion; heaviness; burning in stomach with much flatulence in both stomach and bowels, worse after eating. Bad and bitter taste in mouth. Sweets and acids disagree. Bowels constipated; difficult at times. Has had piles.

Considerable pain in back; could not walk last summer. Sleep poor, only two or three hours a night. Much perspiration; considerable depression of spirits. Lost her husband three years previous.

Pulse, 80. Temperature subnormal. Pale; anæmic and very weak.

Family history: Father died at 69 with stomach trouble. Mother at 58, with stricture of the bowels. Paternal grandfather died under 50 years and maternal grandmother was very delicate.

Physical examination revealed a stricture of the rectum about two inches above the anus, there being a tense fibrinous band forming an annular opening which would not admit the entrance of my index finger. The abdomen was distended with fecal accumulations and gas. After unloading the bowels as well as possible, an attempt was made to increase the size of the lumen of the gut. Rectal bougies were used, but no advantage was gained, while the shock to the patient prohibited further mechanical interference. Weakness was so marked that the patient would faint at stool, so that a special attendant was required to guard against accidents. Under conservative treatment, nutrition was somewhat improved so that the patient returned to her home in Illinois after a few weeks.

In about a year the patient returned in condition similar to that first observed, the stricture possibly increased a slight degree. Besides the usual hygienic measures, thiosinamine, two grains twice daily, was administered, during the latter part of this stay, and the remedy was given for use upon her return home.

The third visit (last summer) of this patient to the sanitarium, showed a generally improved condition, while a digital examination of the rectum revealed an entire absence of the cicatricial band with a perfectly normal feel to the mucous membrane. The speculum showed a normal appearance to the mucosa, no abrasion at the site of the former constricted area, while the bivalve could be opened sufficiently to show that the gut had regained action on a comfortably reasonable basis, although not as distensible as a perfectly healthy rectum should be.

The pathology of this case is in the realm of uncertainty, with the probabilities against malignancy, although a similar case of complete annular stricture of the descending colon in which the microscope gave positive indications that the growth was not benign, leads me to believe that we may have in thiosinamine a valuable remedy for malignant growths.—*Minneapolis Hom. Magazine*, July, 1900.

CASES OF IODINE IN PNEUMONIA.

By Dr. F. B. Percy, Brookline.

Case 1. Mrs. T., age 25, admitted to hospital January 2, mother died of consumption.

Father always well, as also brothers and sisters.

Has had ordinary children's diseases, and four years ago had typhoid fever. Since then, as before, has always been well and strong.

Present illness began December 27, with chills, severe cough, headache, dimness of sight, excessive weakness, severe pain in right lung.

On admission right lung was found consolidated throughout. Temperature, 105.1°; pulse, 120; respiration, 40.

Iodine 1x, drop doses hourly, was prescribed.

January 3, patient more comfortable, expectoration almost clear blood; temperature, 105°.

January 4, temperature, 104.4°; pulse, 120.

January 5, crisis came after night of delirium.

Temperature, 98.3°; pulse 90.

Convalescence was rapid and uneventful, and patient was discharged on January 25.

Case 2. Miss K. was admitted January 26 as convalescent for right sided pneumonia, and when first seen was found to have considerable dullness in lower lobe.

Iodine hastened resolution.

Case 3. Mr. B., student, age 18.

Was taken with severe chill Tuesday night, three days previous. This was followed by severe pain in left lung and severe cough with scanty expectoration. He was treated for some days by his family physician and *Bryonia* and *Phosphorus* had been given. Physical examination showed consolidation of lower left lobe. Expectoration bloody. Severe pains in left side. Temperature 103·2°; pulse, 114; respiration, 38. *Iodine* was prescribed and on the 4th day temperature was normal and convalescence uneventful."

Iodine, Dr. Percy contends, controls "the pneumonic process in its later stage," and carries "the cases through to a successful issue."—*Hom. Recorder*, July 15, 1900.

Gleanings from Contemporary Literature.

PANCREATITIS, WITH ESPECIAL REFERENCE TO CHRONIC PANCREATITIS,

ITS SIMULATION OF CANCER OF THE PANCREAS AND ITS TREATMENT BY OPERATION, WITH ILLUSTRATIVE CASES.

A Clinical Lecture Delivered at the Medical Graduates' College and Polyclinic on July 18th, 1900.

By A. W. MAYO ROBSON, F.R.C.S., Eng.,

SENIOR SURGEON TO THE GENERAL INFIRMARY AT LEEDS, ETC.

Gentlemen,—To be asked to lecture before an audience of post-graduates must always be considered an honour, but when the request comes from such a distinguished body as the council of the Medical Graduates' College and Polyclinic one can only feel that to the honour is added the pleasure of compliance. Fortunately, too, I had a subject which I wanted an opportunity of bringing forward, and I hope that I may have the benefit of your criticisms and the advantage of help from your experience in a class of cases which has hitherto, scarcely, if at all, been generally recognised, but which I believe to be not very uncommon.

Before proceeding to consider the subject of chronic pancreatitis specially, I think that it will tend to the elucidation of my subject if I make a few remarks on pancreatitis generally.

Pancreatitis.

When it is borne in mind that the pancreas is a racemose gland with its various channels opening into a duct which opens along with the common bile-duct into the second part of the duodenum—a channel usually containing septic organisms, and frequently liable to catarrh and other disorders—it is not surprising that inflammation should frequently occur in it. Just as in the liver we may have acute and chronic catarrh of the ducts, infective and suppurative cholangitis, and inflammation of the inter-lobular tissue ending in cirrhosis, so in inflammation of the pancreas we may have any one or more of those affections, though as yet we have not learnt to recognise acute or chronic catarrh of the pancreatic ducts apart from jaundice, or infective and suppurative inflammation of the ducts apart from abscess of the pancreas itself. As our means of diagnosis become more perfect I venture to predict that these affections will be more frequently recognised and awarded their proper place in medicine.

I have seen cases of discomfort with some swelling at the epigastrium associated with dyspepsia and ague-like attacks but without jaundice, or with only very slight jaundice, which I thought might be explained on the hypothesis of infective inflammation of the duct, the cases having cleared up under general treatment. I have also seen the same symptoms associated with more pain, irregular fever, more marked swelling and tenderness over the pancreas and discharge of pus by the bowel from time to time, but without any collection sufficiently large to form a distinct abscess. In a case of this kind seen lately the question of operation was raised, but in the absence of distinct abscess of the pancreas it was not pressed and the patient is recovering. I think that this may have been an affection of the pancreas analogous to suppurative cholangitis.

Causes.—The essential and immediate cause of the various forms of pancreatitis is bacterial infection, this having been positively proved in a number of cases both clinically in the human subject and experimentally in the lower animals, but as in inflammatory affections of the liver and bile-ducts we look for extrinsic causes, so in pancreatic diseases we find

biliary and pancreatic lithiasis, injury, gastro-duodenal catarrh, ulcer and cancer of the stomach, pylorus, or duodenum, and zymotic diseases such as typhoid fever and influenza, to be determining factors, though in some cases pancreatitis has come on suddenly in persons in robust health and the determining cause has been beyond recognition. Though the infection may arise from the blood as in pyæmia, or by direct extension from the neighbouring tissues as in ulcer of the stomach, yet the most usual channel is through the duct, as in the cases related below arising from gall-stones in the common duct, and from gastro-duodenal catarrh.

Symptoms.—It seems to me more convenient to consider pancreatitis clinically under the headings of (1) acute, (2) sub-acute, and (3) chronic, which does not interfere with the pathological classification of acute pancreatitis into hæmorrhagic, suppurative, and gangrenous. The symptoms of pancreatitis are very variable and differ in the separate forms. It is a disease without pathognomonic signs and a correct diagnosis is usually only arrived at by a careful study of the history, mode of onset, and combination of symptoms.

1.—Acute Pancreatitis.

This is usually ushered in by a sudden pain in the superior abdominal region, accompanied with faintness or collapse and followed sooner or later by vomiting. It is almost constantly accompanied by constipation, so that it is quite usual for these cases to be mistaken for intestinal obstruction at first. The obstruction, however, is not absolute, flatus passes and a large enema may secure an evacuation; if the patient survive for several days diarrhœa may supervene. The pain may be so severe as to produce syncope or collapse, and though the pain does not quite pass away it has a tendency to be paroxysmal and to be increased by movement; it is associated with well-marked tenderness just above the umbilicus or between it and the ensiform cartilage. The pain is soon followed by distension in the superior abdominal region which may become general and usually does so in the later stages, and by vomiting, first of food then of bile. The vomiting may be severe and each seizure may aggravate the pain, but at times vomiting may not be a prominent symptom. Slight icterus from associated catarrh of the bile-ducts is usually present and deepens the longer the patient survives. The aspect is anxious and the face is pinched, resembling the facies of peritonitis, which in fact may be present. The pulse, which is rapid and small, is a better guide than the temperature, which may be normal, sub-normal, irregular, or high. Delirium comes on in the later stages. The distension, pain, and tenderness prevent an exact examination of the pancreas, which would otherwise be found enlarged. Death usually supervenes from the second to the fifth day from collapse, though in the less acute cases life may be more prolonged. Acute infective pancreatitis thus takes on the form of acute peritonitis starting in the superior abdominal region. If life be prolonged the case comes under the category of sub-acute pancreatitis, and in that case the onset is usually less grave, though often equally sudden.

2.—Sub-acute Pancreatitis.

This may have a sudden onset with acute pain and vomiting associated with constipation, but the collapse is not so marked and may even be absent; the upper abdominal region does not become so rapidly swollen, and vomiting is less severe and less prolonged. At other times the onset is more gradual, though the symptoms may be similar. Tenderness over the pancreas is well marked and on account of the tympanites being less than in the acute form it may be possible to feel the swollen gland, especially under an anæsthetic. Constipation gives place to diarrhœa, and pus or blood may be noticed in the stools which have a very fœtid odour. The pulse will be less rapid and less thready than in the

acute form, and the temperature is more irregular. I have seen the temperature reaching 104° and 105° F., and yet the pulse to vary between 90 and 110. The morning temperature may be normal and evening temperature high for several days or even weeks. Rigors may occur and may be repeated from time to time. The pain occurs in paroxysms, but there is also a constant dull pain at the epigastrium. The patient may lose the more urgent symptoms and appear to be really improving, but the loss of flesh and feebleness continue and relapses usually occur, leaving the patient each time more and more feeble until death supervenes from asthenia. Albuminuria is pretty constant, but glycosuria is rarely present and lipuria is an uncommon symptom.

If an abscess develop the pus may form a tumour projecting in the superior abdominal region and forming a tender swelling behind the stomach, or perhaps coming to the surface above or below that viscus; or it may burrow into either loin forming a perirenal abscess, or passing under the diaphragm, it may from a subphrenic abscess. Occasionally the pus may follow the psoas muscle and form a subperitoneal abscess in the iliac region or even passing over the brim of the pelvis it may collect in the left broad ligament. I have seen these several terminations in cases either under my own care or under the care of colleagues and I have operated four times for abscess of the pancreas. Sometimes the abscess bursts into the stomach and is vomited, or into the bowel and is voided per anum, after which diarrhœa may continue and pus may be seen from time to time as any fresh collection forms and bursts. I have seen both of these methods of evacuation of the pus. With the evacuation of the abscess relief occurs for a time and the temperature improves, but relapses usually occur and a mild form of septicæmia persists with a hectic temperature. Death is the usual termination, but recovery may occur after a tedious and prolonged illness, as in the case now related.

Case 1.—On March 17th, 1900, I was asked by Dr. J. Glen of Middlesbrough, to see a female patient, aged 26 years, when I obtained the following history. The patient was first attended the last week of December 1899. Her symptoms then indicated a chronic form of dyspepsia with recurrent attacks of diarrhœa, the latter associated with indurated fæces. No relief from treatment resulted. The main symptoms at this time were general tympanitic condition of abdomen with tenderness over the sigmoid flexure, no acceleration of pulse, and no rise of temperature. About the second week in January, 1900, the diarrhœa still persisting, a good deal of fresh blood was present with each evacuation—these giving one the idea of dysentery. Then retching and vomiting set in, but this condition was probably set up by the free exhibition of powder of ipecacuanha. This condition continued more or less for upwards of a fortnight when improvement set in. The tympanites disappeared, the tenderness of the left groin became less, there was less sickness, and a desire for food returned. The diarrhœa abated, there being only one or two evacuations in the 24 hours, the motions being formed. The improvement continued till the second week in February. The patient at this time having gained flesh, was daily gaining strength, and was able to sit up in her dressing-gown for a time each day. A relapse took place, accompanied with much pain in the epigastric region, constant sickness, return of diarrhœa and blood in the stools, and rapid emaciation, and quick pulse and rise of temperature. This condition persisted in spite of all treatment. There had never been blood in the vomited matter except once, when there was a slight streak as if it might have come from the pharynx during the act of severe retching. Since the relapse there has developed a dull area with tenderness over the pancreas, but the degree of tenderness varies from day to day. At one time there was retention of urine, afterwards incontinence;

no albumin or sugar was present. Hæmorrhage was very profuse, the blood being gruel-like and mixed with stools which were very offensive. Dr. Glen showed me the report of the Clinical Research Association of an examination of the fæces which contained some blood and pus but no cells suggestive of growth and no tubercle bacilli. When I saw her the patient was looking very ill and emaciated, with feeble, quick pulse; there was tenderness in the superior abdominal region with rigid recti, but not along the course of the colon either on the right or the left side. Examination under an anæsthetic revealed a swelling in the situation of the pancreas, but no fluctuation could be made out. As there was resonance in front of it, it was clearly behind the stomach, and from its position it was above the colon. Before the anæsthetic the patient said there was very great tenderness on pressure over the swelling in the epigastrium. The rectal examination was negative, except that there was ballooning. I made a diagnosis of suppurative pancreatitis the abscess having discharged into the bowel. I advised five grains of salol, two grains of quinine, and half a grain of opium, to be given thrice daily, the patient to be watched with a view to the testing of her temperature, pulse, &c. Plasmon and somatose dissolved in broth, tea, &c., were ordered as the patient could not take milk. The question of operation was raised and dismissed to be further considered in about a week or 10 days, as she was at the time too feeble to bear even an exploratory incision. From this time improvement steadily occurred and when I saw her again in a fortnight she was picking up distinctly, though there was still well-marked tenderness over the pancreas. In June she had gained nearly a stone and a half in weight, looked much better, and could take her food well; there was however, still a little rigidity of the recti and some tenderness, though no distinct tumour of the pancreas. The diarrhœa had disappeared and there was neither pus nor blood in the motions.

3.—Chronic Pancreatitis.

Chronic pancreatitis, at first hypertrophic but later cirrhotic, is usually considered to be a very rare disease, but experience would lead me to believe it to be a much more common affection than the acute or sub-acute forms, and I think that some cases put down as malignant disease of the head of the pancreas and terminating fatally may be cases of chronic interstitial pancreatitis. My reason for this belief is shown in the cases related below, selected out of 17 cases on which I have operated. My experience has resulted from my having operated on a large number of cases of jaundice depending on obstruction to the common bile-duct; the obstructive jaundice, wasting, paroxysmal attacks of pain and ague-like seizures having given rise to the suspicion of gall-stones, and the absence of relief by medical treatment having rendered surgical treatment necessary. My first case of this nature was a revelation to me, as the patient was extremely ill before the operation which was, in fact undertaken too late; and as there was the opportunity of a post-mortem examination the absence of malignant disease or of other cause than the chronic pancreatitis and associated jaundice to account for the death was directly proved.

This form of pancreatitis is quite distinct from the acute or sub-acute form, though I think it is probable that some of the later cases end in chronic interstitial pancreatitis. It probably usually arises by extension of the inflammation from a chronic catarrh of the pancreatic duct extending from a gastro-duodenal catarrh, though it is frequently associated with biliary or pancreatic lithiasis, or with gastric, pyloric, or duodenal ulcer. Its course varies. The onset may be quite gradual and painless, or may be ushered in by a severe pain at the epigastrium followed by jaundice resembling a gall-stone attack and associated with nausea and vomiting, and perhaps followed by a feeling of chilliness or even a rigor. The pain, how-

ever, is not over the gall-bladder and does not pass round the right side to the subscapular region, but is central and passes backwards to the midscapular region or round the left side, thus resembling stomach rather than gall-bladder pain. The tender spot is usually an inch above the umbilicus in the middle line and not over the gall-bladder as in cholelithiasis. When once jaundice has come on it tends to deepen with each attack until it becomes continuous and chronic. The paroxysms of pain may be repeated more or less frequently or there may be no paroxysmal pain, merely a dull ache deeply seated, burning and boring in character. A swelling of the pancreas may sometimes be made out, but as the recti are rigid because of the pain and tenderness in the epigastrium, it can usually only be discovered under anæsthesia.

Loss of flesh and strength are well-marked symptoms in all cases. Vomiting may in some cases be absent, but there are usually a want of appetite and flatulent dyspepsia, and always a sense of fulness and weight at the epigastrium for some time after food. Jaundice is not necessarily present at first, though it is usually present at some stage of the disease and is often well marked, but, as was pointed out some years ago by Dr. Walker of Peterborough, the stools are white even when the pancreatic fluid alone is absent from the intestine. Diarrhœa is often present and the stools are offensive and may be fatty. Albuminuria is common and glycosuria may occur, but the latter is probably only present in cases where the whole gland is affected. Fever may be absent, but in some cases the temperature runs a hectic course, always rising in the evening and falling in the morning. This is especially the case where ague-like paroxysms occur. These varieties probably depend on the character of the infection in the pancreatic and bile-ducts and also on the amount of obstruction present. Where jaundice is present the pulse may be abnormally slow, and even when the temperature is raised the pulse-rate is not much elevated though the character of the pulse may be poor. In the later stages, especially if the disease be associated with jaundice, hæmorrhages from the nose and the bowel, vomiting of blood and petechiæ in the skin show marked blood degeneration and death ensues from increasing weakness.

In the more chronic cases, especially when there is contraction of the head of the pancreas there will be found a tumour formed by the distended gall-bladder, just as there is in cancer of the head of the pancreas, for which disease chronic interstitial pancreatitis is then apt to be mistaken and a hopeless prognosis given. In such cases the gall-bladder will be found to be distended with mucus, the bile which first filled it having become gradually absorbed, the backward pressure having prevented fresh bile from entering the ducts. This may occur so gradually as to be painless and then the gall-bladder is free from tenderness, which is seldom the case when the distension is due to gall-stones.

Diagnosis.—The diagnosis of chronic interstitial pancreatitis has to be made from gall-stones in the common duct, cancer of the head of the pancreas, cancer of the liver and bile-ducts, and chronic catarrh of the bile-ducts. From gall-stones the diagnosis is of no great importance, since the two diseases are often associated and the treatment is the same; nevertheless, it may be possible to make a diagnosis of gall-stones by the sequence of long antecedent history of spasms without jaundice, then by a severe attack of pain followed by jaundice, and after a time by recurring pains with increase of the icterus associated with ague-like attacks. The absence of tumour is more common in gall stones than in chronic pancreatitis, though in the latter the gall-bladder may be found contracted at times. Although in pancreatitis there is usually less pain, at times the paroxysmal attacks may be equally as severe as in gall-stone seizures. The tenderness in the latter case, however, will be over the gall-bladder, and in the former

at the middle line where the swollen gland can sometimes be felt, especially if the examination is made under anæsthesia; moreover, the radiating pain in gall-stones is towards the right and in pancreatitis towards the left or to the mid-scapular region. In cancer of the head of the pancreas the onset is usually gradual and painless, and the disease generally occurs later in life, usually after 40 years of age. It is preceded by general failure of health, and when the jaundice supervenes it becomes absolute and unvarying and is nearly always associated with a tumour of the gall-bladder, which generally attains a large size and shows no tenderness on manipulation. The liver enlarges from the billiary stasis, but there are no nodules to be felt. In some cases of cancer of the head of the pancreas a hard nodular tumour may be found on the inner side of the distended gall-bladder. Extremely rapid loss of weight and strength with increasing anæmia, but without ague-like seizures, is very characteristic, and it is common for there to be an absence of fever with a slow feeble pulse and later ascites with œdema of the lower limbs. Cancer of the common bile-duct is rare, but when present may resemble, and is usually associated with, gall-stones. In cancer of the liver, the irregular enlargement, the nodular feel, the rapid deterioration of health, the less intense jaundice, and the absence of fever and paroxysmal pains will usually enable a diagnosis to be made. Chronic catarrh of the bile-ducts is usually associated with an absence of symptoms, except jaundice and some loss of flesh. The entire absence of pain and fever with the relief by treatment usually give rise to little difficulty in establishing a diagnosis. In many cases a diagnosis will only be made by an exploratory operation, then the enlargement of the pancreas can be readily felt, or if the tumour be small the head of the pancreas may be found to be hard and perhaps nodular like scirrhus. If ascites be present the tumour will probably be malignant. The lymphatic glands in the lesser omentum may be enlarged in both cancer and chronic pancreatitis, but in the latter they will be discrete and soft, in former hard and perhaps infiltrating. Adhesions are usually associated with chronic pancreatitis, but are generally absent in cancer.

Pathological appearances.—Whenever there is obstruction of the common bile-duct by gall-stones, with associated infective cholangitis, the pancreatic duct may be subjected to backward pressure and to the same infective dangers as the liver; hence the association of infective and suppurative inflammation of the pancreatic duct is quite common. If this irritative process is kept up for some time the substance of the pancreas participates in the inflammatory process and an interstitial pancreatitis results. There may be uniform swelling of the gland or only of certain lobules. Effusion into the inter-lobular and into the peri-glandular cellular tissues is associated with proliferation and detachment of the epithelium lining the acini and the tubes, and there is a crowding together of the cells, with an accumulation of inflammatory fluid containing round cells and blood corpuscles in and around the affected parts of the gland, leading to tension. This simple pancreatitis is known by examining the parts of the pancreas less severely affected when death has occurred from abscess or other disease affecting a limited portion of the gland, and I have also seen it in cases of common bile-duct obstruction where the pancreatitis only proved a secondary and not the fatal disease. In the greater number, if not in all cases of obstruction of the common duct where the obstruction is close to the duodenum the pancreatic duct participates in the infective process which usually follows, and when death occurs it will be found that pus can usually be squeezed from the duct of Wirsung; this has been observed independently by Dr. A. R. Ferguson of Glasgow. If resolution takes place complete recovery may occur or the interstitial effusion may organise and lead to irregular contraction of the tissues and possibly to cirrhosis or

chronic interstitial that may either end in diabetes if the whole gland be affected or may lead to pressure on, or distortion of, the common bile-duct and so to chronic jaundice, thus simulating cancer of the head of the pancreas. If, on the other hand, the inflammation be too acute for resolution to occur it may pass on to suppuration which may be general or localised. In all cases of chronic pancreatitis on which I have operated I have found numerous and firm adhesions around the duodenum, pylorous, and hepatic flexure of the colon, all of which have been adherent to the liver and gall-bladder, and on several occasions occlusion of the foramen of Winslow has been found. Where there has not been associated cholelithiasis, the gall-bladder will usually be found distended, and if the obstruction of the common duct be complete it may be very large and filled with mucus. The lymphatic glands usually participate in the inflammatory process and may suppurate. If the patient survive there may be abscesses in the liver, pressure on, or thrombosis of, the splenic vein, enlargement of the spleen, pressure on, or thrombosis of, the portal vein with ascites, or even obstruction to the flow of blood through the vena cava and œdema of the legs.

Prognosis.—The disease may last for months or even years, and it is not improbable that some of the cases of jaundice persisting for several years and called chronic catarrh of the bile-duct may be of this nature. If glycosuria supervene it makes the outlook more grave. Increasing weakness and the supervention of hæmorrhagic tendencies usually show the near approach of a fatal termination. Under surgical treatment the prognosis is very favourable, as out of 17 cases on which I have operated 16 have recovered, and in nearly every case complete restoration of health has occurred.

Treatment of Pancreatitis.

In acute infective pancreatitis treatment pratically resolves itself into that of peritonitis commencing in the superior abdominal region. The pain at the outset is so acute as to necessitate the administration of morphia, and the collapse will probably demand stimulants, which on account of the associated vomiting may have to be given by enema. In the early stages the symptoms are so indefinite that the indications for surgical treatment are not clear enough to warrant operation, and until the collapse has passed off no surgical procedure would be justifiable. The simulation of intestinal obstruction will probably lead to efforts to secure an evacuation of the bowels and relief to the distension. In the only case of this kind that I have seen the distension of the upper part of the abdomen was so great and the patient was so obese that any exploration from the front was out of the question, even when the diagnosis was established. A posterior exploration was discussed and would have been made but for the speedy death of the patient. Just as in a perforative or gangrenous appendicitis an early evacuation of the septic matter is necessary to recovery, so in this equally lethal affection an early exploration in the left costo-vertebral angle is demanded, and as it can be performed with very little difficulty I should certainly perform it early in any case I might see in the future, when I should evacuate the septic material and adopt free drainage.

The sub-acute form of pancreatitis is much more amenable to treatment, as the indications are so much more definite and there is more time for careful consideration, and though it has usually only been attacked when abscess has formed and is manifestly making its way to the surface, yet there is no reason why in some cases surgical treatment should not be adopted at an earlier stage. As in the acute condition, morphia may be required to relieve the paroxysmal pain and stimulants and food by the rectum to relieve the collapse and support the strength. The distension, if present, may also demand attention and may have to be relieved by

lavage of the stomach and turpentine enemata or by the administration of calomel by the mouth. Calomel is also of benefit by acting as an intestinal antiseptic, for which purpose it may be given in small repeated doses or in doses of five grains, followed by a saline aperient. As soon as the constipation is relieved diarrhœa is apt to supervene, when salol and bismuth with small doses of opium may be given. If surgical treatment is decided on, a median incision above the umbilicus will enable the operator to palpate the pancreas and locate any incipient collection of pus, which if practicable should be evacuated by a posterior incision in the left or right costovertebral angle, or failing that possibility the collection of pus may be aspirated and the cavity opened and packed with gauze, which may be brought forward through a large rubber drainage-tube which will in the course of from 24 to 48 hours establish a track isolated from the general peritoneal cavity. In one case I was able to do this, but the operation was undertaken at too late a stage to be successful, and though the patient lived two or three days afterwards the evacuation of the pus seemed to make very little difference to the general septic condition previously existing and death occurred from increasing debility. The method adopted had, however, been successful from the point of view of drainage, and the track of the gauze and tube was isolated from the general peritoneal cavity. If a definite abscess form and approach the surface in front or in either loin the treatment will be that of incision and drainage as in the case of any other abdominal abscess. Of four cases on which I have operated two recovered completely, one recovered from the operation but died a few weeks later from debility. The fourth case is the one just referred to. The strength must be maintained by careful feeding and the judicious administration of stimulants. It will be necessary to keep a sharp look-out for further collections of pus and for subphrenic abscess or empyema which on recognition will need treatment.

The course and treatment of chronic interstitial pancreatitis is exemplified in the cases related below. Doubtless, in some of these cases the manipulation of the indurated tumour has detached calculi impacted in the gut, but in others the relief of tension as the result of draining the bile-ducts by cholecystotomy or cholecyst-enterostomy has indirectly drained the pancreatic duct and thus has led to a subsidence of the pancreatitis, then to an opening of the common duct by the relief of the tension, and so to a cure of the patient. The simulation of malignant disease of the head of the pancreas by chronic interstitial pancreatitis would make me hesitate to decline operation in any case of distended gall-bladder where the patient was in a condition to bear it, or even in any case of chronic jaundice without distension of the gall-bladder where the general health was deteriorating, as though it should be recognised that if the disease be really malignant very little good will be done and life may even be shortened or prolonged for a short time, yet if the disease prove to be chronic pancreatitis a real and permanent cure may be brought about. If a calculus be felt imbedded in the head of the pancreas or impacted in the pancreatic duct it may be reached through the second part of the duodenum by laying open the papilla and exploring the duct or by dividing the peritoneum passing between the duodenum and hepatic flexure of the colon and then cutting through the overlying pancreas on the concretion. If the papilla be incised it does not require suture and in the cases in which I have explored the ducts by the duodenal route there has been no hæmorrhage; the anterior duodenal opening requires closing by a mucous and a serous suture. Drainage of the right kidney pouch for from 24 hours to 48 hours is advisable, though not always necessary, and this is best done by a stab wound at the most dependent part.

For attacking the head of the pancreas or the pancreatic duct a vertical

incision should be made through the right rectus and not in the middle line. In all cases of deep jaundice I prescribe chloride of calcium in 20-grain doses thrice daily for 24 hours or 48 hours before operation and give it in an enema form for 24 hours afterwards in 60-grain doses thrice daily.

Case 2. *Chronic pancreatitis; cholecystotomy; cure.*—A man, aged 45 years, was sent to me on Oct. 25th, 1898, by Dr. J. B. Berry of Keighley. The patient was very deeply jaundiced and told me that he had lost a stone in weight since the onset of his illness five weeks before. He gave the history of having had attacks of pain referred to the region of the gall-bladder nine years previously, but they were unaccompanied by jaundice and passed off after prolonged treatment. From that time onward he had been free from attacks of pain up to the onset of the present illness five weeks before, when he was suddenly seized with severe pain at the pit of the stomach and became jaundiced. The pain had recurred daily and had been so severe as to necessitate his taking morphia. Dr. Berry noticed a swelling in the region of the gall-bladder a fortnight after the onset of his illness, and there was all along well-marked tenderness at the epigastrium with gradually increasing enlargement of the liver. The patient's general health rapidly failed and the loss of flesh was marked. When I saw him he looked pinched and ill, he was very deeply jaundiced, and the urine was loaded with lithates but contained neither albumin nor sugar. There were well-marked tenderness at the epigastrium and a smooth tumour, which was not very tender, in the gall-bladder region; the liver was enlarged and the edge was smooth and could easily be felt an inch below the costal margin. A diagnosis of gall-stones in the common duct was made, and the patient was admitted into the Leeds General Infirmary. The operation was performed on Sept. 27th, 1898. On opening the abdomen numerous adhesions between the gall-bladder and liver and the pylorus, colon, omentum, and duodenum were found. The gall-bladder was slightly distended, but no gall-stones were felt either in it or in the cystic or common duct. There was, however, a hard nodular swelling of the head of the pancreas which at the time was thought to be malignant. In order to give relief the adhesions were detached and the gall-bladder was drained by cholecystotomy. On Oct. 28th I wrote to Dr. Berry telling him that I feared that the disease of the pancreas might be malignant but that there was a possibility of its being a chronic pancreatitis. On Nov. 5th I wrote a letter to this effect: "I am pleased to be able to tell you that your patient has improved very much and the jaundice has nearly disappeared. I hope, therefore, that the tumour of the head of the pancreas may have been inflammatory and not malignant. At the time of operation it occurred to me that it was not quite hard enough for a malignant tumor, but under the circumstances I felt it my duty to give you my suspicions." From that time onwards recovery was uninterrupted and the patient left the hospital with the wound closed within the month. In December, 1899 the patient, at the kind suggestion of Dr. Berry, called to report himself to me. He looked perfectly healthy and had gained over a stone in weight since his return home. He had neither pain nor tenderness and he said that he felt as well as if he had never ailed anything. The scar was firm, the liver was normal, and there was not the slightest tenderness in the epigastrium or in the gall-bladder region.

Case 3. *Chronic pancreatitis; cholecystotomy; cure.*—The patient was a man, aged 45 years, residing at Pickering. On March 29th, 1898, he was brought to see me by Mr. G. V. Robertson of Pickering, the history being that he had been well up to 12 months before, when he began to have painful attacks at the pit of the stomach ending in vomiting, but not followed by jaundice until an attack on Jan. 1st, 1898, since which time he had been deeply and continuously jaundiced. He had also from that

time onwards had ague-like attacks, and two days before seeing me he had had within 24 hours three of these seizures, each accompanied by pain. Within a twelvemonth he had lost 2st. 8lb in weight. On examining him there was some swelling in the gall-bladder region but no tenderness. The liver was a little enlarged but the margins felt smooth. There was decided tenderness in the middle line just above the umbilicus and on deep pressure the pain was considerable and an indefinite fulness could be felt. The diagnosis of gall-stones in the common duct was made, and an operation was advised. The patient was operated on at a surgical home on March 30th when the gall-bladder was found to be slightly distended and surrounded by adhesions to the pylorus, duodenum, colon, and omentum. No gall-stones could be discovered, but there was a well-marked swelling of the head and the first two inches of the pancreas which though nodular and irregular was not very hard. This extended further to the right than normal so as to cover in the lower end of the common bile-duct. Cholecystotomy was performed. Within 24 hours of the operation nearly four pints of very offensive bile were discharged through the tube. A specimen was examined by the Clinical Research Association and their report was as follows: "The bile contains both staphylococci and streptococci, but no bacillus coli communis could be found either under the microscope or in the culture." Fearing that the disease might be malignant and the patient being so extremely weak and ill I gave a poor prognosis, but in a few days I was able to write: "[The patient] is progressing very satisfactorily, though he is still profoundly weak. Bile has appeared in the motions so that the obstruction is evidently overcome. The bowels have been moved naturally and the patient is less deeply jaundiced and looking better generally." On April 5th I was able to report that he was taking food well and that bile was passing freely in the motions. He had had no recurrence of the shivering attacks. The drainage was continued for 14 days. On the 20th the patient returned home. The urine was then free from bile and the motions were assuming a natural colour; he was taking food well, gaining flesh, and looking better generally. I still, however, gave a guarded prognosis, though I said that I hoped that the tumour would prove to be inflammatory and not malignant. From that time onward his progress to recovery was extremely rapid. A report I had of his condition from Mr. Robertson a few months later said that he was perfectly well in every respect and that he had fully regained his lost weight. I heard of this patient two years after his operation and he was still in perfectly good health.

Case 4. *Chronic pancreatitis associated with gall stones; cholecystotomy; cure.*—On Oct. 20th, 1899, I was asked by Dr. T. C. Squance of Sunderland to see a female patient, aged 51 years, who had been suffering for three years from attacks resembling those of gall-stones, each attack being followed by jaundice. During the past 14 weeks the seizures had been more frequent and severe and jaundice had never quite cleared away before another attack came. She had lost flesh and strength considerably and had vomited from time to time between the attacks. Her digestion was much impaired and there was a want of appetite. She had had no rigors, and had only slight fever at the time of each seizure. The urine contained abundant lithates and a slight trace of albumin, but no sugar. On examination the abdomen showed no manifest enlargement of the liver or gall bladder, but some tenderness over the gall-bladder and the epigastrium where there was an indefinite sense of fulness. An operation was performed on the 23rd, when after detaching numerous adhesions 15 gall-stones were removed from the cystic and common ducts, but as a large nodular mass was occupying the head of the pancreas and partly obstructing the common duct it was deemed advisable to perform cholecyst-enter-

ostomy so as to make a permanent opening between the fundus of the gall-bladder and the duodenum. The tumour gave the impression both to myself, to Dr. F. Macrae, and to Dr. Squance that it was malignant. Recovery was, however, uninterrupted, the button was passed on the tenth day, the wound healed by first intention, and the patient immediately began to put on flesh. She returned home within the month and has since been perfectly well in every respect. It is now nine months since the operation, and her health, I am informed, is perfect.

Case 5. *Chronic pancreatitis; cholecystendysis; cure.*—The notes of the following case have been kindly furnished by my freind Mr. Peter MacGregor of Huddersfield. The patient was a female, aged 51 years, married, and the mother of several healthy children. "Her previous history was unimportant, but for two or three years she had been a dyspeptic and during the past nine months she had been more or less continuously under medical treatment for dyspepsia and recurring attacks of 'cramp in the stomach.' ..... I first saw her on August 19th, 1899, when I got the above history, and a careful physical examination elicited nothing beyond tenderness in the pyloric region. On the 28th, I was telegraphed for to see her and found her suffering from a severe attack of gall-stone colic. She was seen at intervals from August 28th to Oct. 16th. On the latter date I found her emaciated and in more or less constant pain, with frequent attacks of colic and distress after every particle of food and with much straining and vomiting. Every variety of food had been tried, predigested and otherwise, but all with the same result—constant pain, frequent vomiting. Dr. Williams told me that he could feel a tumour in the pyloric region, but the patient was so very ill and examination caused so much distress I did not satisfy myself of the fact. No jaundice on this date, but previous attacks of colic had been followed by jaundice. On Nov. 28th the patient came into a nursing home for operation. She was then in constant pain with frequent retching, deeply jaundiced, and a perfect skeleton. Operation (Nov. 28th)—On examining the patient under chloroform a hard, rounded, irregular tumour was found between the umbilicus and the ribs. On opening the abdomen, the stomach, much dilated, was found extensively adherent to the under surface of the liver and on stripping it off, a healthy gall-bladder in the normal position came into view. The right kidney, which had been diagnosed as 'floating,' was examined and the diagnosis verified, but the rounded, hard, irregular mass behind the duodenum appeared to be so undoubtedly a malignant tumour of the pancreas that the abdomen was closed and the friends were informed that the case was malignant and hopeless. After-history: The temperature never went above normal; stitches were removed on the ninth day. On the fifth day after operation patient had a chop for dinner. Within a fortnight the jaundice had gone, the appetite rapidly improved, and she went home at the end of three weeks feeling much better, although the four medical men who were present at the operation all felt, and said, she would die within six weeks. On March 15th, 1900, she was plump and fat, ate anything, had had neither pain, retching, nor vomiting since the operation. Her tumour had quite disappeared and her medical man had discharged her as cured many weeks since."

Case 6. *Chronic pancreatitis; cholecystotomy; cure.*—A woman, aged 35 years, was admitted to the Leeds General Infirmary under the care of Dr. A. G. Barrs on Sept. 11th, 1899, and transferred to me a few days later with the history of having been subject to attacks of spasm in the upper abdominal region for 12 years, the intervals between the seizures having varied from a few days to several months, but of late they had become much more frequent, and during the week before admission she had had four attacks, all severe ones. The seizures began with pain in the epigas-

trium accompanied by cold sweats and faintness; the pain passed through the mid-scapular and to the right subscapular region, and lasted from two to six hours, having to be relieved at times by morphia. Jaundice followed the seizures, and if the attacks recurred frequently it was intensified with each, but if there was a long interval only an icteric tinge remained. Palpation revealed a point of tenderness in the mid-line one and a half inches above the umbilicus where there was a sense of resistance with an abnormal fulness, but there was no tenderness over the gall-bladder nor could any swelling of the gall-bladder or liver be discovered. On Sept. 21st a vertical incision through the right rectus exposed adherent viscera and on the separation of the adhesions a thickened gall-bladder was exposed, but there were no gall-stones in it or in the ducts. The lower part of the common duct was surrounded and overlaid by a well-marked swelling of the pancreas which was harder than usual, but not sufficiently hard to be mistaken for cancer though it was somewhat nodular. Cholecystotomy was performed and drainage was carried out for a fortnight. Recovery was uninterrupted and the patient returned home within the month and she has remained well since.

Case 7. *Chronic pancreatitis with gall-stone in the common bile-duct; cholecyst-enterostomy; relief; relapse.*—A man, aged 45 years, from Queensbury, was admitted into the Leeds General Infirmary under my care on Nov. 3rd, 1899, suffering from jaundice with repeated attacks of pain and ague-like seizures. He had been well up to 13 months before his admission when the attacks began and since their onset he had lost 6 st. in weight. Jaundice followed the first seizure and persisted, but after each attack of pain it was more intense. He was so weak and ill that it was feared he could not bear an operation. An enlargement of the right lobe of the liver could be felt and on its inner side in the mid-line just above the umbilicus there was another tumour situated behind the stomach. On Nov. 6th an operation was performed on a heated table with the patient enveloped in wool, an injection of 10 minims of solution of strychnia having been previously given. On opening the abdomen an enlargement of the right lobe of the liver was seen, the gall-blader was found shrunken under adhesions, a floating gall-stone too hard to crush was felt in the common duct, and a hard nodular tumour of the head of the pancreas was discovered. As the latter was thought to be malignant and the patient was extremely feeble choledochotomy was not performed, but the gall-bladder was connected to the duodenum by a Murphy's button in order to give temporary relief to the jaundice, fever, and pain. He had a severe rigor on the night of operation but afterwards progressed satisfactorily and recovered from the operation. The button passed on the twelfth day and as he had gained some weight and was taking his food well it was thought that the operation was going to be of real benefit to him. The subsequent history of the case was as follows:—On Dec. 8th (a month and a day after operation) he had a feeling of chilliness, and a temperature of 101°F. followed for two days, his temperature being afterwards normal for 12 days when he had a rigor and a return of the jaundice; from this time, although he got up every day, he gradually became weaker, and in January, 1900, he developed bronchitis which ushered in the final scene. At the post-mortem examination the peritoneum was found to be free from inflammation and the gall-bladder was found to be connected to the duodenum one and a half inches beyond the pylorus, but the opening had contracted so that it would only admit a fine probe. The common bile-duct was dilated and ulcerated and it contained a gall-stone of the size of a filbert. The liver was considerably enlarged and the right lobe was occupied by an abscess containing thick, slimy muco-pus. The walls of the abscess cavity were ragged and ill defined and it reached nearly to the surface both in

front and behind. It was doubtless the result of the suppurative cholangitis which was present. The pancreas was much indurated about the head and together with the indurated tissues in the small omentum presented on palpation the sensation of a tumour. On section it presented to the naked eye the appearance of chronic inflammation rather than growth, and on microscopical examination this view was confirmed, there being a great excess of interstitial fibrous tissue, but no sign of cancer.

To add other cases would be tedious to my hearers, but I thought it desirable in bringing forward a subject of this kind to illustrate it by a detailed history of cases that had actually come under my observation. The last case where death occurred from other causes two months after operation is, I think, of importance, as it enabled one to ascertain the after condition of the pancreas which at the time of operation presented the appearance and feel of a considerable tumour. It clearly shows that drainage is capable of relieving the form of pancreatitis which I have described, but that for permanent relief a cholecystotomy is a much safer means than a cholecyst-enterostomy, seeing that the fistula in the latter operation may close before it has completely done its work.

The difference in the results of operations for chronic pancreatitis and cancer of the pancreas is well shown in my own practice. Of 17 patients on whom I have operated and found chronic pancreatitis to be the obvious disease present, 16 have recovered, and except in one case related the patients have been restored to health; whereas in cancer of the pancreas, of 16 patients only 9 recovered from the operation and of these the prolongation of life was so short as to make me reiterate what I said years ago that if we can diagnose cancer of the pancreas with certainty any operative treatment is likely to be useless or harmful. Seeing, however, that sometimes the diagnosis may be doubtful, and that this must often be the case in young and middle-aged subjects, I am of opinion that an exploratory operation should be seriously considered in such cases, as, should the case turn out to be an inflammatory condition of the pancreas and not cancer, I think that I have proved that much may be hoped for by surgical treatment.—*Lancet*, July 28, 1900.

Acknowledgments.

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THE STRONG MINERAL ACIDS.

(From the French of the late Dr. Piedvache in *L'Art Medical*, March 1900, quoted from *Revue française d'homœopathie*)

ALTHOUGH all the acids, even the organic, have certain common properties we shall occupy ourselves with the three strong mineral acids forming a well-defined group because their properties are more analogous between themselves than are their respective radicals. I wish to speak of the Acids Nitric, Hydrochloric, and Sulphuric.

In their state of concentration they exercise upon the tissues a caustic, destructive action, the result of which, when not rapidly fatal, is to produce cicatrices and contraction of the alimentary canal.

The secondary effects of toxic doses interest us more, and are observed among workmen of manufactories (professional poisonings). They correspond with the symptoms of small experimental doses upon healthy man.

Diluted and introduced into the stomach they diminish its acid secretions, but increase the production of saliva. Hence the utility of lemonades in fevers, since they alleviate the dryness of the mouth.

These acids even in the smallest doses, produce in healthy man

stomatitis and angina, sometimes diphtheritic, more often ulcero-membranous; dyspepsia and diarrhœa; also hæmorrhoidal congestion.

They are remarkably hæmorrhagi-pare.

Their influence upon nutrition is not less considerable as evidenced by scorbutic symptoms, cutaneous eruptions, multiple adenitis, above all considerable prostration of the vital energies accompanied by great moral depression, profound melancholia, and intellectual decline,—a complexity of symptoms the resemblance of which with the *adynamic state* is perfect. It is not then surprising that they hold the first place in the treatment of grave fevers. They are besides polychrests of the first order.

Acidum Nitricum.

Syn.—Spirit of Nitre; Aqua Forte.

Empirical uses.—As caustics in the concentrated state. In malignant and petechial fevers as lemonade. As diuretic in dropsies. In chronic jaundice and diseases of the liver. In syphilis, dyspepsia, Bright's disease, and chronic cutaneous diseases.

The pathogeneses of Nitric Acid have been almost entirely obtained since Hahnemann from experiments with small doses. Their physiological effects agree perfectly with what we know as the results of acute poisoning (such as diuresis, cough, hæmoptysis, salivation, cardiac trouble), and these are the infinitesimal doses that we generally employ in therapeutics.

The medicine exerts its action chiefly upon the mucous membranes and skin, but especially towards the muco-cutaneous orifices, at those places therefore where the skin is fine, such as in the folds of the joints and on the penis. The lesions which are produced on them commence as vesicles, bullæ, or as impetiginous pustules, and are remarkable for two tendencies, first to ulcerations, to fissures and rhagades, and secondly to condylomata, to warts, and to vegetations.

The ulcerations have an irregular contour and tend to gain in depth, contrary to those produced by Mercury which remain superficial. They are painful with this characteristic, as if prickles have been driven into the tissues. Their secretions are serous and excoriating, or purulent but more greenish yellow and uncomfortably thick.

As for the vegetations, they readily assume the form of cauliflower, soft, cracked and oozing. Hence their use in the epithelial diathesis (compare *Thuja, Lycopodium, Silecea).*

Nitric Acid is suitable in soft chancres, and in venereal phagedena ; in primary and secondary syphilis.

As resembling the latter, we find patches on the lips and the margin of the anus, as rhagades, very painful ulcerations and rhagades of the tongue. The analogy with the action of Mercury is complete by the fact that Nitric Acid is an excellent remedy in mercurial ulcerations and perhaps in general mercurial effects (compare *Hepar Sulph*).

The other symptoms of Nitric Acid are scarcely less like those of *Iodine.*

By the side of syphilis we shall place scrofula, to which the adaptation of Nitric Acid is determined not only by the character of the ulcerations, but still more by the multiple adenitis, by the vesicular and ulcerative keratitis, and by suppurative otitis (comp. *Calc. carb*).

It affects profoundly the digestive canal in all its extent. In the mouth, besides the ulcerous affections of the tongue, there is pultaceous, aphthous stomatitis (comp. Merc. Iod.), ulcero-membranous stomatitis, for which we have obtained the best results from low dilutions, as also in fungous gyngivitis and mercurial stomatitis.

In pultaceous angina, in tonsillitis with soft false membrane (therapeutic effects less verified), in constrictive dysphagia which recalls the globus hystericus ; also in paralysis of the soft palate, Nitric Acid has been found useful.

Then we have pyrosis, violent thirst, and anorexia ; nausea and vomiting of mucus and of the ingesta, hæmatemesis, violent colic and tympanites ; gastralgic pains forcing one to bend double in front ; diarrhœa, stools green, profuse, lienteric, dysenteric, alternating with constipation ; stools sanguinolent, melanic.

The affections which, clinically have been most benefited by Nitric Acid, are ulcers of the stomach (round ulcer), principally by the thirtieth ; chronic diarrhœa when the colicky pains persist long after stool ; morning diarrhœa ; lienteria of phthisis ; obstinate dysentery ; excessive pains, and intolerable and ineffectual tenesmus ; rectal ulcers following dysentery ; consti-

pation when the stools are small, dry, with burning of the rectum (compare *Iris*, *Sulph.*).

Intestinal hæmorrhages are the principal reason for giving Nitric Acid in typhoid fever (comp. *Acid Phos.*, *Ars.*). Other indications are furnished by pulmonary complications, and threatening paralysis of the lungs.

Good results have been obtained from Nitric Acid in protruding, bleeding and very painful hæmorrhoids; in fissures of the anus; in hypertrophy of the liver; as well with the high dilutions as with the first decimal.

If we pass on to the mucous membrane and to the organs of respiration, we find habitual dry coryza, and chronic coryza with purulent, ulcerative, fœtid discharge. In cases of this kind Nitric Acid has rendered service when there are failure of secretions of the throat, with sensation of obstruction of the nose and of the pharynx.

This is one of the traditional remedies for the hoarseness of singers (comp. *Argent.*, *Bell.*, *Caust.*, *Phos.*); for ulcerative laryngitis, and laryngeal phthisis when the cough is fitful, fatiguing, provoked by laughter and cries, is nocturnal and worst in the first part of the night, with sensation as if the chest was too full and bound by an iron hoop. The clinical verification of these symptoms have been made in the pneumonia of old people, in the last stage of pulmonary phthisis with hectic fever, hæmoptysis, great dyspnœa and pains in the chest, profuse purulent, greenish and salty expectoration, morning diarrhœa (comp. *Calc. carb.* of which the diarrhœa is predominantly in the evening), chilliness in bed, heat by fits, palpitations from the least exercise, intermittent pulse.

In autopsies after poisoning with the acid, lesions of endo-carditis and endo-arteritis have been found. Clinical proof is absolutely wanting of the utility of the medicine in cardiac affections. But this is what we can affirm that the intermittency of the pulse, when it corroborates other indicative symptoms, is the most important characteristic.

There is another symptom of it which has its value; it is the strong odor of the urine (comp. *Ac. Benz.*). A second remark that we suggest about the urinary passages is the analogy of its effects with those of Cantharis: albuminuria, painful vesical tenesmus,

violent urethral pains, sanguinolent and purulent discharge from the urethra. Hence the real success met with in the acute period of blenorrhagia (comp. *Cann.*), in acute cystitis with very frequent micturition, hypogastric pain, hæmaturia, in albuminuria and Bright's disease when with intense sufferings in the region of the kidneys, the urine is scanty and the breath fœtid. Polyuria (interstitial nephritis) has nevertheless been equally observed.

We have already spoken of bleeding and painful and phagedenic chancres of the penis. Clinical experience has added preputial herpes, and a certain kind of orchitis but imperfectly determined.

As for the female genital organs, Nitric Acid presents itself as a remedy often verified in obstinate metrorrhagia with pressure in the hypogastrium, pain in the thighs, shooting in the rectum after stool, and great anæmia; also in leucorrhœa associated with the same conditions.

From the side of the organs of sense we can claim for it some use on the one hand in ulcerative keratitis, corneal opacities and syphilitic iritis; and on the other in hardness of hearing, especially from obstruction of the Eustachean tubes.

To complete the physiognomy of Nitric Acid it is necessary to add: Sadness and anxiety, noctural insomnia with tossing, diurnal somnolence, a headache as if the pains were in the bone and the head tied with a band; epileptiform convulsions at night and when taking to bed; frequent vertigo in the day time dissipated by a drive (epileptic vertigo).

With regard to this first medicine (Nitric Acid), we repeat once for all: The choice of a remedy is determined by the greatest similitude possible. But all the characters have not in this regard equal importance. The grand characteristics of this remedy will be found above, some of which are: Emaciation, profound anæmia, and failure of the vital forces, hæmorrhages, intermittent pulse, strong odor of the urine, ulcerative or vegetative cutaneous diseases especially at the muco-cutaneous orifices.

[According to Hahnemann *(Chronic Diseases)*: Nitric Acid "acts more beneficially with patients of a tense fibre (brunettes) than with those of a lax fibre (blondes). It is also more appropriate to chronic patients who are inclined to *soft* stools, while it is seldom applicable to patients inclined to constipation."

According to Jahr *(Symptomen Codex)*: "The majority of the symptoms disappear by riding in a carriage. The symptoms increase towards evening, especially the drawing pain which is felt here and there. Pains, even slight ones, affect him violently, he is beside himself."—*Editor.*]

Hydrochloric Acid.

Syn.—Acidum Muriaticum.

Hydrochloric Acid responds more than the others to failure of the vital forces and to an assemblage of grave general symptoms of which the typhoid state is the most perfect: dorsal decubitus, with tossing, anxiety, unconsciousness, continual muttering—the patient has not the power to raise his head, sordes on the teeth, fœtid breath, dry tongue as if paralysed, stupor, fixed eyes, falling of the inferior jaw, coldness of the extremities, involuntary stools, very feeble intermittent pulse.

We have, therefore, a capital medicine for typhoid fever, and Phosphoric Acid is its best analogue. This last, however, has less of stupor, and the torpor is not unconquerable. Further, the diarrhœa of Muriatic Acid is dark-colored, that of Phosphoric Acid is pale. Arsenic is the nearest after Phosphoric Acid. Muriatic Acid has also indications for malignant scarlatina: difficult, imperfect eruptions mixed with petechial and purpuric patches.

If we compare it with Nitric Acid, we find that it is less hæmorrhagic and that its tendency to ulceration is less pronounced, but that the diphtheroid products are more marked. Malignant diphtheria can therefore claim it as a remedy not less than scarlatina. Indeed, there are several cases of cure of grave naso-pharyngeal diphtheria with fœtid running from the nose. Of all its congeners it is the most appropriate in scorbutic lesions of the mouth and in mercurial stomatitis; the internal use is sufficient, although local applications of the fuming acid are remarkable.

Muriatic Acid is not less classic for aphthæ as a sequela of diseases, when there exists diarrhœa. Dyspepsia with pyrosis is a pathogenetic effect of the drug, and it may be remembered that Trousseau, preceded by Wehl, employed it in this affection. This is entirely homœopathy, and still here the attenuations are preferable to the doses of Trousseau, who gave one or two drops of the dilute acid.

The reputation of the drug in the treatment of hæmorrhoids is conformable to its pathogenesis: The successes are daily observed in painful hæmorrhoids of large size, pendent, with fœtid and excoriating mucous discharges (white hæmorrhoids); this is a very certain indication especially if in addition the pain is aggravated by cold water and relieved by heat. It is chiefly valuable in hæmorrhoids of pregnancy.*

As regards the urinary apparatus, diuresis, dysuria, and incontinence of urine are physiological effects which may be occasionally utilized.

The organs of sense give an important symptom, namely, vertical hemiopoia, a symptom which is found in Lithium and Lycopodium, whereas Aurum produces horizontal hemiopia.

The low and the medium dilutions are the most used, without descending below the third centesimal.

Sulphuric Acid.

The dynamic effects of Sulphuric Acid have been less studied than its toxicology. This, however, gives us only to remember the fact, namely, that in autopsies large black and firm clots have been found in the iliac veins and in the femoral arteries. What, under the action of small diluted doses we know best, is its elective affinity for the mucous membranes of the respiratory and the digestive systems.

The general indications differ but little from those of the two preceding acids, so little that the distinction is very difficult. Nevertheless the following special characteristics have been given: Trembling all over the body†; a sensation in the skin of the face as if there was a layer of white of egg which was drying on it; a remarkable appetite (craving) for strong liquors, hence its use in the treatment of alcoholic dyspepsia; vomiting of the ingesta, tolerance only of alcohol; enlargement of the liver; watery diarrhœa; cerebral excitement; large and burning hæmorrhoids. These symptoms very nearly resemble those of Nux Vomica, but a degree more advanced.

* Muriatic Acid is useful in both blind *and* flowing hæmorrhoids, as among its pathogenetic symptoms are: "Profuse hæmorrhage from the rectum with the stool. Blood with the stool for several mornings."—*Editor.*

† The real pathogenetic symptom is: "Tremulous sensation all over the body, *without* trembling, less in the morning."—*Chronic Diseases.* The symptom was experienced by Hahnemann's son Friedrich Hahnemann.—*Editor.*

Outside alcoholic dyspepsia, we find true dyspepsia, with vomiting of the ingesta and drinks, salivation, sensation as of a morcel in the throat, ardent thirst: The characteristic indication for the vomiting of pregnancy, is aggravation by lying on the right side. It gives relief in cancer of the stomach when with the preceding symptoms there exist sharp smarting in the pit of the stomach and when drinks burn in the passage.

Diarrhœa completes all the indications of Sulphuric Acid. It is pale yellow like stirred eggs, mixed with mucus and blood; especially diarrhœa of infants with fœtid stools, and sour odor of the whole body.

In typhoid fever the distinction with Phosphoric Acid rests upon the general trembling, the vomiting already described, relief from alcoholic drinks, and the intensity of the hæmorrhoids; this is infinitely more marked than in Muriatic Acid. The purpura, is it not moreover combated in all the schools by means of Sulphuric Acid! It is useful in hæmorrhages from all the passages, in the cachexias, grave and adynamic maladies.

In tubercular hæmoptysis, it is in the cachectic period that the remedy may render some service. As I am speaking of the respiratory passages, I may remark that it provokes a dry and harsh cough, hence we may utilize it in dry, persistent catarrhs. It sometimes relieves also the cough of phthisical patients.

It is a medicine for general pruritus without eruptions (comp. *Conium*).

The lower dilutions are those best tolerated and are ordinarily preferred.

[According to Hahnemann *(Chronic Diseases)*: "Sulphuric Acid, where homœopathically indicated, removed the following ailments: Tension in the eyelids, in the morning; short-sightedness; hardness of hearing; inguinal hernia; chronic looseness of the bowels; profuse menstruation; discharge of blood from the uterus; roughness of the throat; asthma; swelling of the feet; coldness of the feet."—*Editor.*]

THERAPEUTICS AS A SCIENCE.

IX.

(*Continued from* Vol. xix, No. 8, p. 318.)

The Materia Medica as Hahnemann left it.

We have seen that even at the time when Hahnemann was teaching that in order to cure a disease certainly, quickly, and permanently we should employ a medicine which is capable of producing as nearly as possible all the symptoms of the disease or at all events the greatest number and the severest or most peculiar of them, and in the same *order*, he produced a specimen of the Materia Medica in which the order of development of symptoms was not given. In this work (the *Fragmenta*) we may say the symptoms are not recorded with an eye to any order whatever.

In the *Materia Medica Pura* and in the *Chronic Diseases*, a certain order was observed, but not exactly the same in both, for we find that whereas in the former the mental symptoms are given last of all, in the latter they are given first. But with this difference the order observed is pretty nearly the same. First we have the head, then the face, then the organs of sense—eyes, ears, and nose, then the alimentary system commencing with the mouth and ending at the anus, then the urinary, the genital, and respiratory systems, then the trunk and the extremities, then the general corporeal sufferings and cutaneous affections, then sleep, and last of all febrile affections. This order, it will be seen, is an arbitrary anatomical or regional order, without any reference to the physiological order of the appearance of the symptoms.

Hahnemann expressly says that he has arranged the pathogenetic symptoms after this schematic form in order to facilitate the search for them. This was in consonance with and a legitimate consequence of the homœopathy of the totality of symptoms which he taught not only as the only practicable but as the only true and necessary homœopathy.

Dr. Dudgeon has well observed that "the Hahnemannic schema is as unnatural and artificial an arrangement of the features of many allied morbid portraits as though an artist should paint a family group, arranging all the eyes of all the members of the family in one part of the picture, all the noses in another, the ears all together, and so on. From such a picture

correct though each feature might be, it would be a difficult matter for us to build up each separate portrait, and it is equally difficult for us to ascertain the various morbid portraits from the *tableaux* Hahnemann has presented us with in his *Materia Medica.*"

But it is not the disarrangement of the symptoms that constitutes the only defect of the Materia Medica as left by Hahnemann and still followed in its construction by his followers. There are others which detract considerably from the value of the symptoms that have been recorded. And the first is the non-mention of the dose in the largest majority of the drugs proved. Out of one hundred and one drugs that Hahnemann proved and admitted into the Materia Medica, of only nine is any mention made of the dose in which they were proved. These are Cinchona, Helleborus niger, Camphor, Argentum metallicum and nitricum, Calcarea acetica, Carbo vegetabilis, Natrum muriaticum, and Aurum metallicum. Of the remaining ninety-two he gives us no clue as to the dose or doses in which they were proved. Now, as latterly he recommended the proving of medicines in dilutions, even as high as the 30th, it would have been interesting and instructive to know which medicines were proved in these dilutions, and if they were also proved in their crude state or mother tinctures. For then we might have known what symptoms were elicited by the former and what by the latter. It is a fact, which Hahnemann himself has noticed, that the symptoms a medicine can excite differ according to the dose in which they are exhibited. If therefore the varying doses, in which the drugs were proved, were known, we could have distinguished between primary and secondary and alternating symptoms, if these really exist, as we believe they do.

The second defect is the non-mention of the sex of the prover except when the symptoms of the genital organs are recorded. This is a serious defect inasmuch as it prevents us from knowing the connection of the symptoms of the sexual organs with those of the general system.

The third defect is the non-mention of the hours of the day and the seasons of the year and the phases of the moon when the drugs were administered, as also the number of times they were repeated during the whole proving. This deprives us of the

means of ascertaining the exact influences which these various circumstances did exert upon the prover in developing symptoms.

The fourth defect is the non-mention of the age and temperament of the prover. That these exert considerable influence on the susceptibility to medicinal action cannot be doubted. And it would have been a great gain if we could have known how the same drug affects different ages and temperaments.

The fifth and the last defect that we shall mention is the non-distinction between symptoms observed on the healthy and those observed on the sick. It is now almost certain, though Hahnemann does not expressly say so, that a large number of symptoms in the *Chronic Diseases* were obtained from his patients. It would have been well, if he had indicated the distinction, for then we could have judged of the relative values of the symptoms. He should not have relied too much upon his mastery and expertness as an observer where, according to himself, "the weal of suffering humanity was at stake."

It is a serious question, of ethics, of principle and right, if infants and children and even boys who have not attained the age of majority, in other words who have not learned to exercise their reason and therefore are not fully conscious of the responsibility of their position,—if such should be subjected to provings of medicines, which is but another name for deliberate poisonings. That they should never be made the subjects of the proving of *unknown* drugs is a point which we think must be admitted by all right-minded men, and should be established as a principle to be observed and obeyed in conducting provings. In the case of drugs already proved, and whose toxic doses are therefore well known, exceptions might be made. But even here, it must be admitted, we have no right, not even the parents, to subject undeveloped human beings to experimentation of which the significance they cannot be made aware.

How then, it may be asked, are we to have a knowledge of the effects of drugs upon infancy and childhood and boyhood, if we are to restrict our provings to adult life only? Our answer is, for this we must depend upon chance and observation of the sick. If we remember that absolute health is a rare commodity, we ought not altogether to neglect observations on patients. It was not from mere greed of symptoms, as is generally but we should think unjustly imagined, that Hahnemann latterly

admitted that the pure effects of medicines were possible of discovery from such observations, though with the caution characteristic of a true man of science he left their interpretation "exclusively to masters in observation."

The Materia Medica, as it is, has, it must be admitted, been fruitful of therapeutic results infinitely superior to those of the old school. This is the experience of every practitioner of homœopathy, and is admitted even by the severest critics of the Materia Medica as left by Hahnemann. Thus Dr. Dudgeon says: "Though I have freely criticized the defects of Hahnemann's *Materia Medica*, I would be sorry to give you the impression that I at all undervalue his work. On the contrary, the more I study his *Materia Medica* the more I marvel at the transcendent acuteness of the author, his wonderful perceptive powers, his almost miraculous instinct in perceiving the characteristic symptoms, the germs of grand pathological states producible by medicines, amid the perplexing redundancy of their less important pathogenetic effects, and I may safely say that in the mere labor of the Materia Medica, Hahnemann's own doings are tenfold as great and important as all the labors of all his predecessors and all his followers; that while we might manage to get on though we were deprived of all the provings of every other contributor to our Materia Medica, were we deprived of Hahnemann's observations and especially his earlier provings, such as belladonna, aconite, bryonia, nux, pulsatilla, rhus, arnica, mercurius, &c., we might shut up shop at once. In the matter of the Materia Medica, we all must acknowledge that among them that are born of women there hath not arisen a greater than Samuel Hahnemann."

Homœopathy, however, is yet far from having attained the development it is capable of. But apart from this, the difficulties of its application even in ordinary cases are so great as to be a serious drawback in its progress. In a great measure this is due not only to the disarrangement of the natural order of development of the pathogenetic symptoms, but no less to the imperfection and incompleteness of the provings themselves.

The Necessity of Reproving.

Hence the necessity of reprovings of drugs already admitted into the materia medica, has been urged from time to time, but unfortunately not yet satisfactorily carried into effect.

The latest delivery on the subject is by Dr. Howard P. Bellows, of Boston, who, in his presidential address at the Annual Meeting of the American Homœopathic Ophthalmological, Otological and Laryngological Society, held in Washington, June 16th, of this year, has not only given the most powerful reasons for the necessity of Reprovings, but shown the way in which they ought to be conducted which leaves very little to be desired.

Though Dr. Bellows as a specialist has called the subject of his discourse, "The Reproving of the Homœopathic Materia Medica from the Standpoint of a Specialist," his observations cover the whole ground of the materia medica from every point of view. Specialty in medicine is a necessity on the principle of division of labor. No specialist can be truly an expert unless he is armed with a thorough general knowledge of medicine and acquainted with the materia medica as a whole. Were it not so, Hahnemann's schematic materia medica would be the best for him. Dr. Bellows does not think so. He says: "The general practitioner and specialist alike feel in every day's experience the lack of precision, the verbiage and the minor inaccuracies of our present Materia Medica. No thought of condemning it enters the mind; to cast it aside is not to be considered for an instant; we owe to its guidance, with all its imperfections, the best successes of our professional career; we still believe it to the best therapeutic guide in the world to-day; and, therefore, our whole impulse is to cherish it, but at the same time to improve it, applying ourselves to this purpose with a zeal which is exactly commensurate with our recognition of its imperfections."

We ought to keep in view the objects to be attained by such reprovings. These are rightly stated by Dr. Bellows to be: "a greater discrimination and accuracy in both the observation and the description of whatever drug-effects may be developed; a more perfect elimination of all sources of error in confusing drug-effects with constitutional disturbances or temporary derangements of health from other causes; a restoration of the natural sequence or grouping of drug-effects as indicated in different organs and tissues of the body; and as the result of all this, the presentation of a definite, precise, sharply defined statement of the pathogenetic sphere and mode of action of each remedy studied. The effort of the past," he goes on, "has been to

expand our Materia Medica by the accumulation of many varied symptoms, with little check upon the vagaries of the imagination. The effort of the future should be *to eliminate and condense* with scientific and judicial accuracy."

We hope to attain success not because of "any superior acumen which we possess over the original provers, or in any greater intellectual capacity, breadth of oversight or power of mental grasp," but because of our possession of the modern instruments of precision, such as the microscope, the ophthalmoscope, the laryngoscope, the Roentgen ray apparatus, &c., by which the interior of the organism may be examined, and which were little known or altogether unknown to Hahnemann and his disciples. "What the modern laboratory method of research," observes Dr. Bellows, "has done for physiology and pathology in the hands of our colleagues of the old school, we may reasonably expect to do for us, in our school, in developing the science of therapeutics which is our peculiar field of medical study." Certainly; and we should go further and say that Pharmaco-dynamics is but a continuation of the study of experimental physiology and pathology. And for the successful prosecution of it, drugs should be proved not only on human beings, but also on animals which Hahnemann discouraged and almost condemned.

The following is the summary given by Dr. Bellows of his recommendations which we have thrown into paragraphs and numbered in order to give our readers a clear idea of them:

1. That from the standpoint of a specialist, the reproving of the Homœopathic Media requires that such work be done either in our large cities or in close connection with our medical colleges;

2. That it be conducted by organized clubs or boards of physicians which shall be presided over by a master or director of provings;

3. That this director shall himself be a general practitioner of the largest possible experience and the broadest general knowledge and grasp of materia medica, or that he be a specialist who has previously had such general experience in medicine;

4. That he shall be associated with him two or three other general practitioners for the division of labor and a body of specialists for the examination of special conditions and testing of special organs, and that these shall cover the mind and nervous system, the eye, the nose and throat, the chest, the genito-urinary system and the skin;

5. That arrangements shall be made for the assistance at all times of laboratory experts for chemical, microscopical, bacteriological and physiological tests;

6. That the provers shall receive some adequate compensation for their time and services, the means to come from private sources, from funds administered by our medical colleges, or from the treasuries of our State societies;

7. That the provers shall be subjected to careful preliminary organic and functional tests;

8. That they shall receive the drug to be proven at the hands of the director of the proving so guarded by blanks and counter-tests that they shall not know the nature of the drug taken or when the actual administration begins;

9. That the examiners themselves shall not know what drug is being proven or when it is being administered, but may receive special hints or practical suggestions from the director at his discretion;

10. That the prover shall keep a daily record of his own condition and symptoms in a book provided for this purpose and shall submit this written record every day to the director of the proving;

11. That after careful questioning the director shall each day send the prover to such specialists as may seem desirable for the further testing and verification of special symptoms or conditions which may arise, the visit to be made during the specialist's office hours or at such other convenient seasons as may be specified in advance or arranged at the time by telephone;

12. And that, finally, the results of the proving as a whole shall be summarized and arranged for publication in scientific form by the director with such aid from any or all of his associates as he may desire."

The novel and the most important feature in this scheme of proving or of reproving of drugs is that instead of one physician, as recommended by Hahnemann, having to superintend the proving, there should be an orgainsed body with a chief or director or president, assisted by several others among whom there must be specialists, and also by laboratory experts for making chemical, microscopical, bacteriological, and other examinations. There can be no doubt that when the prover is subjected to close scrutiny and observation and examination by such a body of trained men, the effects of the proving developed in him throughout his whole organism will be noted and recorded in their entirety, and that not a single one of them will have chance of escaping notice. The materia medica will, under such direction of proving, gain in fulness and completeness. But it must be remembered that this result will have to be attained at the expense of much sacrifice, much trouble and worry, in addition to sufferings from artificial disease, on the part of the prover. And, therefore, very rightly we think, Dr. Bellows recommends that the provers should receive some adequate remuneration for all this.

Dr. Bellow's reason for having more than one person to direct and superintend provings is that "it is impossible for any one man to properly observe and record and analyse and interpret all the symptoms which may arise throughout the organism in the course of a scientifically conducted proving." His reason for having experts to assist is equally cogent: "It is in like manner impossible for any body of men who are possessed of similar acquirements and the same technical training, to do this work as it ought to be done to meet the requirements of modern scientific methods. But given a body of men whose acquirements are dissimilar, whose training in the use of modern instruments covers all the organs of the body, whose powers of observation are quickened and trained each in a different direction, whose ripened experience in diverse fields of pathology gives them a power to analyze the significance and trend of abnormal systemic and functional disturbances and, with such a force of observers, the methods of modern science can be applied and put to the test in the homœopathic proving of drugs."

It may sound strange but is perfectly true when he says: "To observe carefully and faithfully record is not enough for our present requirements. That was the method of the past and it was carried out by laymen and physicians who were noting their own personal symptoms. The results, as we have them in our present Materia Medica, are sometimes garrulous, sometimes scanty and insufficient, and very often misleading. It would have been of immense advantage to us," he goes on, "could these symptoms have been passed upon by some persons other than the provers themselves, some physicians with specially trained powers of observation who could apply physical tests, who could judiciously question and so determine the relation of associated symptoms, who could eliminate errors and the workings of the imagination, and who could, in some instances at least, not only state in scientific terms the facts and conditions noted, but out of their knowledge and experience could give them physiological and pathological interpretation which would bring them more directly into relation to the cure of disease."

Provings carried on in this thorough manner would be truly scientific and ideally perfect; and the materia medica, as the result of such provings, would enable us to render therapeutics almost mathematically exact. This consummation so devoutly to be wished is not possible of realization in the near future. But this should not deter practitioners from reproving the drugs of the present materia medica in the best way they can, which is sure to lead to considerable improvement in the existing stock of knowledge.

(To be continued.)

EDITOR'S NOTES.

Certain Observations on Thunderstorms.

The *Indian Meteorological Memoirs* (Part ix. vol. vi.) contains an interesting discussion of the thunderstorm observations recorded in 1897 at ten selected stations of this country, by Mr. W. L. Dallas, as will be observed from the following note reproduced from *Nature* (August 23, 1900) :—

"The results for the year have been divided into five-day periods. The storm-frequency varies considerably in different parts, but, generally speaking, the number of storms is unimportant during February and the early part of March ; but after the middle of March the thunderstorm season commences, and continues until the middle of October, the maxima occurring towards the end of May and September. After October 23 no storms are reported. Storms are much more frequent in the afternoon than in the morning, and when a storm occurs in the forenoon it is followed, almost without exception, by another in the afternoon. There is a belief that the damage done by lightning in the tropics is slight compared with that done in temperate zones, and the fact that at ten observatories in the year in question only four instances of damage being recorded gives support to this belief."

As observed before, electrical variations and disturbances form an important part among meteorological phenomena and meteorology has a great bearing on morbi-genesis. It is therefore necessary for our profession that observations like the above should be made and recorded on an extended basis.

Arrested Labour from Distended Bladder in Fœtus.

Convelaire (*Bull. et Mem. de la Soc. Anat. de Paris*, March, 1900) reports the delivery a little before term of a primipara, aged 24. Pregnancy had been normal. When she was admitted into hospital it was not certain how long the waters had escaped. There was slight albuminuria. The occiput presented to the right posteriorly, and there was some difficulty in delivering the head. Then the shoulders could not be extracted, even when the posterior arm was lowered. The child died during these manœuvres. The head midwife drew down the anterior arm, but the humerus was fractured and the shoulders remained fixed. On exploration the thorax appeared normal, but the abdomen was much swollen, and fixed above the pelvic inlet. The trocar was used, and 550 grams of fluid came away ; it was clear, lemon-yellow in colour, and highly albuminous. Then the child was easily extracted. It weighed, excluding the urine already removed, over 6¼ lbs., and measured 18¾ inches; the biparietal measurement was 3½ inches. It was a female. The distention of the abdomen was due to retention of urine. The cause of the retention could not be detected ; there was no malformation, and the urethra was quite free from stricture. The ureters and renal pelves

were dilated. Gaüdon, Cornelli, and Lefour have reported similar cases where no stricture existed. In Porak's case the obstruction was due to a valvular fold in the mucous membrane, which Hergott of Nancy suspects must exist in all such cases, but is easy to overlook. As a rule retention of urine is due to complete congenital stricture.—*Brit. Med. Journ.*, Aug. 4, 1900.

Placental Transmission.

Dorland (*Amer. Gyn. and Obst. Journ.*, June, 1900) reviewing the literature of the placental transmission of drugs and specific diseases, finds that certain drugs—not all—show a tendency to traverse the placenta and entering the placento-fœtal circulation exert a positive influence for good or evil. Maternal medication is therefore indicated in certain conditions. The drugs which most notably affect the fœtus are opium, mercury, copper, lead, arsenic and the iodides. In appropriate doses they may be administered to the mother in suitable pathological conditions, with beneficial results to mother and child. Any morbific influence acting on the mother either acutely, as in the case of the exanthemata, or more slowly, as in tuberculous and specific infection, will react deleteriously on the product of conception and either destroy it through its overwhelming toxic action and render it feeble and less resistant to subsequent and postnatal invasion or the disease will run an atypical course during uterine life with or without apparent vestiges at birth. The entrance into the fœtal structures is accomplished through the agency of a fœto-placental circulation. It is probable that access is gained through bacterial action the germs rendering the placental villi less resistant to invasion, whereas both the microbes and their toxin pass the natural barrier at the chorio decidual junction. As a rule, infectious diseases do not manifest their characteristic visceral lesions in the fœtus, probably because of the passivity of these organs before birth. The germs, however, may be detected in large numbers by bacteriological and microscopical examination.—*Brit. Med. Journ.*, August 4, 1900.

The Hygiene of High Altitudes.

It is well known that the chemical composition of the atmosphere differs but little, if at all, wherever the sample be taken, whether it be on the high Alps or at the surface of the sea, the relation of oxygen to nitrogen and other constituents is the same. The favourable effects, therefore, of a change of air are not to be explained by any difference in the proportion of its gaseous constituents. One important difference, however, is the bacteriological one. The air of high altitudes contains no microbes and is, in fact, sterile, whilst near the ground and some 100 feet above it microbes are abundant. In the air of towns and crowded places not only does the microbic impurity increase, but other impurities, such as the products of combustion of coal, accrue also. Several investigators have found traces of hydrogen and certain hydrocarbons in the air, and especially in the

air of pine, oak, and birch forests. It is to these bodies, doubtless consisting of traces of essential oils, to which the curative effects of certain health resorts are ascribed. Thus the locality of a fir forest is said to give relief in diseases of the respiratory tract. But all the same these traces of essential oils and aromatic products must be counted strictly speaking as impurities since they are not apparently necessary constituents of the air. As recent analyses have shown, these bodies tend to disappear in the air as a higher altitude is reached until they disappear altogether. It would seem, therefore, that microbes, hydrocarbons, and entities other than oxygen and nitrogen and perhaps we should add argon, are only incidental to the neighbourhood of human industry, animal life, damp, and vegetation.—*Lancet*, August 18, 1900.

Influence of Sterilised Air on Animals.

Kijanizin (*Archiv. d. Biol.*, tom. xvi, p. 663) in 1894 published some researches on the influence of bacteria in the intestinal canal on the assimilation of nitrogen, and showed that in their absence the amount of this element absorbed is considerably lessened. This is to be explained on the ground that these organisms are capable of aiding peptonisation and the breaking up of albumen by their fermentative action. In the course of these experiments he found that if he confined animals in a chamber to which only sterilised air was supplied some died after a few days of this confinement, others though taken out alive died shortly after, and the rest showed symptoms of extreme lassitude and weakness. These results were proved by the author not to be due either to starvation or to the exhalation of any toxic matter by the animals, or to the presence of any carbonic oxide in the sterilised air, and the present series of experiments was undertaken to elucidate the problem. Analysis of the urine of the animals thus confined showed that the quantity of leucomaines, which are the products of incomplete oxidation of albumen, was largely increased, while the proportion of urea, the product of complete oxidation, was much decreased. In other words the oxidation processes which normally go on in the tissues themselves were found to be considerably interfered with by the exclusion of organisms from the respired air. Reference is made to the experiments of Gautier, Ehrlich, and others which have shown that in the processes of oxidation which take place in the tissues themselves certain ferments, hitherto undefined, are the active agents; the author's observations point to the fact that these ferments are supplied by bacteria which gain access to the blood and probably to the leucocytes in the lungs. The actual cause of the debility and death in the animals is the enormous accumulation of insufficiently oxidised products which exercise a toxic influence. Kijanizin in fine states his conviction that in addition to the oxygen of the air certain micro-organisms normally present therein are necessary to life; that by gaining access to the blood they aid in the ultimate oxidation processes in the tissues, and that in their absence imperfectly oxidised products accumulate and cause death.—*Brit. Med. Journ.*, August 4, 1900.

The Relation of the Cell to the Enzymes.

In the address on some of the Pathological Problems of the Present Day delivered before the Thirteenth International Medical Congress at Paris, (August 6, 1900,) Sir John Burdon-Sanderson dwelt upon the relation of the cell to the enzymes, or soluble ferments which originate from cells. The following summary of it is furnished by *Nature*, (August 30, 1900):—

"Formerly, he pointed out, each kind of cell was regarded as having a single special function proper to itself but the progress of investigation has shown that each species of cell possesses a great variety of chemical functions and that it may act on the medium which it inhabits, and be acted upon by it, in a variety of ways. Thus, for example, the colourless corpuscles of the blood (or, as they are now called, leucocytes) are considered not merely as agents in the process of suppuration or as typical examples of contractile protoplasm, but rather as living structures possessing chemical functions indispensable to the life of the organism. Similarly, the blood disc, which formerly was thought of merely as a carrier of hæmoglobin, is now regarded as a living cell possessed of chemical susceptibilities which render it the most delicate reagent which can be employed for the detection of abnormal conditions in the blood. The tendency of recent research is to show that the reactions referred to as chemical functions of the cell (action of the cell on its environment—action of the environment on the cell) are the work of ferments—intrinsic or extrinsic—which are products of the evolution of the living cell, and therefore to which the term enzymes may be applied.

Recent researches have plainly indicated that in the case of the disease-producing micro organisms, the specific functions which for years were regarded as proper to, and inseparable from, the cell belong essentially to the enzymes which they contain. It has been further shown that similar statements can be made as regards ferment-processes which differ widely from each other and no less widely from those induced by bacteria. So that in the domain of microbiology the enzyme may in a certain sense be said to have "dethroned the cell." For if, as M. Duclaux has said, it is possible to extract from the cell a substance which breathes for it, another which digests for it, another which elaborates the simple from the complex, and finally another which reconstitute the complex from the simple, the cell can no longer be considered as *one*, but rather as a complicated machine, the working of which is for the most part dependent on enzymes, which, however numerous and varied may be the processes in which they are engaged, all follow and obey the universal law of adaptation, and all contribute to the welfare and protection of the organism."

Deaths by Violence in the United States.

Statistics show that deaths from suicide are steadily decreasing in the United States. During 1899 there were 5,340 persons who made away with themselves, as against 5,920 the year before, 6,660 in 1897, 6,520 in 1896, and 5,759 in 1895. Of the total for last

year, 4,155 were males and 1,185 females. Among professional men were 38 medical practitioners, 9 clergymen, 7 attorneys, 7 bankers, 7 journalists, 2 college professors, and 2 actors. This classification is necessarily incomplete, and includes only persons of some prominence, but it is interesting as showing the tendency toward self-destruction among professional men. The preponderance of medical practitioners is striking, more than one-half of those enumerated belonging to that profession. Classified according to cause, despondency is said to be accountable for 2,573 cases, insanity for 355, drink for 127, ill-health for 225, domestic unhappiness for 191, disappointed love for 146, business losses for 74, while 1,649 are attributed to unknown causes. In regard to the means of self-destruction employed, 2134 used poison, 527 hanged themselves, 302 cut their throats, 30 burnt themselves to death, 25 threw themselves in front of trains, 42 jumped from housetops or windows, 7 blew themselves up with dynamite, and 4 starved themselves. In the same year the number of murders was 6,225, or nearly 1,000 more than the suicides. There were 131 executions, a number so utterly out of proportion to the murders as to indicate a failure of justice in a vast number of cases. Nevertheless the figures show a slight improvement when compared with those of former years. There were 109 executions in 1898, 128 in 1897, 122 in 1896, 132 in 1994, 126 in 1893, and 107 in 1892. It is a notable fact that the largest number of legal executions was in the Southern States. Georgia had 19, Texas 11, Alabama 10, while in the other Southern States there were 32. But if the number of legal executions was small, that of lynchings was large enough to make up for any deficiency in the infliction of the last penalty of the law. There were 107 cases during the year compared with 127 in 1898, 166 in 1897 131 in 1896, and 171 in 1895. Of these, 103 occurred in the Southern States, Georgia leading with 28. The alleged crimes were: Murder, 44; complicity in murder, 11; rape, 11; alleged rape, 6; race prejudice, 5; robbery, 5; aiding criminals to escape, 3; arson, 1; inflammatory language, 1; rape and murder, 1; highway robbery, 1; arson and murder, 1. In 1 case mistaken identity is assigned as the reason; in 1 no offence was alleged, while in 4 the reason is said to be unknown. Apparently lynching is regarded by some of the free citizens of the great Republic of the West as a form of amusement. —*Brit. Med. Journ.*, August 11, 1900.

Modern Views on Love.

"Once, in a word, I was a fool: and then I was in love." So wrote a cynical seventeenth century writer with let it be confessed a modicum of truth. We have recently received two American publications which claim to show that their authors have localised love. One of these, Dr. Wallace Wood, places it in what he calls the "anterior metopic lobule." The other, Mr. John M. Dagnall, crudely states his idea thus—"Love is in the stomach not the heart." Dr. Wood's thesis, which is reprinted from the *New York Medical Journal* for June 23rd, 1900, is as follows: A "ramp" is an S-shaped curve and "every fibre and artery in the living body is a ramper. ..... The

humblest worm aspires, ramps, stands upon his base, and lifts nose and feelers skyward." Darwin, it will be remembered, studied worms with peculiar care but we do not recollect that he mentions their ramping. On the other hand, we do remember that he mentions that they were quite indifferent to the loudest sounds of the bassoon. Perhaps, however, Dr. Wood's worms would moderate their rampings if he were to play to them. However to proceed. The brain, says Dr. Wood, flowers at both holes, the brain surges forward and upward and overarching, the Psyche seems to lift up her head. The top of the forehead appears to be ever ramping heavenward or sunward and life is rampancy, perennial life is double rampancy, immortal life is supernal rampancy. We must confess that we have not the slightest idea what this last sentence means, but somehow "supernal rampancy" does not seem a thing to which to look forward. But we understand from Dr. Wood that in this godlike peak, the anterior metopic lobule, lies the centre for the higher sympathy. "As *ennoia*, or the *vis passiva*, this divine force is willingness to give your heart away; as *prothymia*, or the *vis activa*, it is uncontrollable impulse forcibly to give or *throw* your heart away." Further, "it is a divine artery through which is poured the milk of women and the blood of men; it is the navel string that connects the faithful hound to his master." A divine force which is at once a willingness to give your heart away, an artery which carries both blood and milk, and is a navel string, is, to quote Calverley, "a thing imagination boggles at." Mr. John Dagnall writes in what he calls "rhythmical phraseology." We do not find the rhythm although the sentences are cut up into lines, e.g.:—

"But now comes the mystery of locating
Love's permanent seat. Is it in the bosom
Or in the stomach? Is it so believed
That the bosom hath yet Love for a tenant:
But I can prove that Love's lease there hath
Long since expired, and that it hath vacated
The apartment it once occupied in the heart
To dwell in the stomach."

Needless to say, Mr. Dagnall does not prove this remarkable thesis. If he has not already done so he had better communicate with Dr. Wallace Wood.—*Lancet*, August 25, 1900.

Jaundice without Bile in the Urine.

At the meeting of the Société Médicale des Hôpitaux of Paris held on July 6th MM. Pierre Merklen and Janot showed a case of jaundice in which bile pigment was entirely absent from the urine, *ictère acholurique*. This condition has been only recently recognised—by M. Hayem. In a communication entitled, "Special Form of Colouration of the skin in certain Dyspeptics: Jaundice without Biliary Pigment or Urobilin in the Urine," he has called attention to a peculiar form of sub-icterus characterised by a chamois-leather tint of the skin, analogous to the xanthochromi observed by Besnier in certain cases of xanthoma, and specially marked in the palms and in the folds of flexure of the fingers. The colouration is certainly a form of jaundice, for in spite of the absence of biliary pigment from the urine the blood serum is tinged with it. The etiology and evolu-

tion are not clearly known. According to a second communication of M. Hayem the sub-icterus develops slowly and insidiously, and once established persists, although it is subject to variations. It supervenes in certain dyspeptics presenting the characteristic signs of parenchymatous gastritis and is accompanied by neurasthenic symptoms, fatigue, disinclination for work, emaciation and nervous irritability and depression. The patient shown to the society corresponded completely to the type described by M. Hayem. She was a woman, aged 53 years, who had been treated for chlorosis since the age of 23 years and was subject since the age of 25 years to disseminated and erratic pains which corresponded to the clinical type of general neuralgia of Valleix or painful neurasthenia. For 18 months she had suffered from obstinate dyspepsia with furred tongue, fœtid breath, epigastric pains, constipation, and sometimes glairy stools. For three months there had been a yellow tint of the skin without billiary colouration of the conjunctiva or urine. The tint was of a chamois-leather colour especially marked on the face, hands, along the crests of the tibiæ, and on the soles. It suggested xanthodermia rather than icterus. The mucous membranes were not coloured and the urine, which was examined on several occasions, never showed a trace of bile pigment. This was in favour of the diagnosis of xanthodermia but the presence of biliary pigment in the blood serum settled the question. Blood obtained by cupping was examined after the retraction of the clot. The transuded serum was of a light mahogany colour; it darkened all the spectrum from blue to violet and gave Gmelin's reaction. After the appearance of the discolouration of the skin the patient wasted, the constipation became more marked than ever, and the neurasthenia increased. Examination of the internal organs was negative; the liver was not enlarged and the fæces were neither bilious nor discoloured. The urine contained neither sugar nor albumin; it amounted to from 1000 to 1200 grammes in the 24 hours, was of specific gravity 1013, and contained about 15 grammes of urea. This oliguria was no doubt in relation with the dyspepsia, for the renal permiability was normal. The pathogenesis of *ictère acholurique* was disputed. MM. Gilbert and Castaigne thought that the acholuria was due, at least usually, to defect of renal permeability; but the case was opposed to that hypothesis. M. Hayem supposed that there was a slight infection of the biliary passages and too little bile pigment in the blood to pass the renal filter. In the present case the icteric tint diminished 10 days after the administration of sulphate of soda, in daily doses of 75 grains, which regulated the bowels.—*Lancet*, August 11, 1900.

Treatment of Simple Goitre in Young Adults.

Professor George Murray of Newcastle contributes to the August number of the *Edinburgh Medical Journal* a valuable paper on the Medical Treatment of Some Forms of Simple Enlargement of the Thyroid in Young Adults. He states that the results appear to be scarcely as well known in this country as they deserve to be and that he had seen several cases of goitre in which operative treatment had been proposed as the only means of relief but which improved so much under medical treatment that no operation was needed. The most

favourable cases for treatment were those of simple parenchymatous enlargement of the thyroid gland occurring in adolescents and young adults. In these there was a uniform general enlargement of the whole gland which came on gradually and painlessly until it attracted attention by the discomfort it caused to the patient when wearing a collar. As the enlargement proceeded there might be dyspnœa from compression of the trachea. This was probably a true hypertrophy of the thyroid gland occurring in response to some demand for an increased supply of thyroid secretion. In some cases the gland if left untreated would continue to enlarge beyond physiological limits, and to arrest this growth it was necessary to give the thyroid gland a period of enforced rest by supplying to the patient by the mouth preparations of active thyroid substance. The gland then passed into a resting condition and underwent a partial atrophy with corresponding diminution of size. This may be compared to the mammary gland during lactation, which, as soon as the child is weaned and the demand for milk ceases, returns to a resting condition and decreases in size. In selecting suitable cases for treatment it is most important to ascertain that symptoms of exophthalmic goitre, such as frequent pulse, exophthalmos, nervousness, and tremors, are entirely absent, for in cases of this disease the symptoms are often aggravated by thyroid extract. In carrying out treatment either liquid thyroid extract (15 minims) or dry thyroid (three or more grains) may be given three times a day. Each lobe of the thyroid of a sheep should yield eight grains of the dry thyroid substance. The following two cases are given as illustrative instances. Case 1.—A girl, aged 13 years, noticed after an attack of bronchitis which occurred two years previously, a swelling in front of the neck which steadily increased. On admission to the Newcastle Royal Infirmary early in February both lobes and the isthmus of the thyroid were found to be enlarged uniformly. The superficial veins in front of the thyroid were conspicuous and there was a little dyspnœa which was increased on exertion. The circumference of the neck over the swelling was 16½ inches. When pressure was made on either lobe towards the opposite side the breath-sounds became stridulous. She was treated with dry thyroid substance as above three times a day, and within a few days the goitre had distinctly diminished in size, the neck being reduced to 15 inches in circumference, and with continuation of the treatment to 14 inches. The breathing became easier in consequence and she continued to improve till on April 12th, when she left the hospital, the neck was 13¾ inches in circumference and the thyroid gland had returned nearly to its normal size. Case 2.—A lad, aged 16 years, suffered from a gradual enlargement of the thyroid for six months, the enlargement involving both the lobes and the isthmus, till he was unable to wear a shirt collar 15½ inches in circumference but could button on one of 16½ inches. He was ordered three grains of the dried thyroid three times a day and ordered to rub red iodide of mercury ointment over the goitre every night. After a month the thyroid substance was taken only once a day and after another month the ointment was discontinued. The goitre steadily diminished until it was reduced to half its size, the circumference of the neck being reduced to 14 inches.—*Lancet*, Aug.25,1900.

CLINICAL RECORD.

Foreign.

CASES BY DR. P. JOUSSET.

1. A Case of Idiopathic Cystitis.

M—, aged 45, was admitted into the hospital of Saint-Jacques at the end of May. He complained of smarting pain during and after micturition. His urine was pale and turbid and formed, in the conical vessel, a muco-purulent deposit which rose to the third part of the liquid. Treated with Cantharis ℚ, 4 and 5 drops in 125 grammes of water to be taken during the day, the patient experienced a rapid amelioration. The smarting pain disappeared at first, and the muco-purulent deposit notably diminished during the days we suspended the administration of the medicine.

On the 22nd June the patient was well so far that there was no more suffering, but his urine still deposited a notable amount. I prescribed Dulcamara, 3rd dilution, 2 drops, and at the end of four days, 3 drops. The patient, very much ameliorated, was discharged from the hospital.—*L'Art Medical*, August, 1900.

2. A Case of Traumatic Cystitis (?)

Jeanne A—, aged 10, was admitted into the hospital of Saint-Jacques on the 29th May.

This girl reported that some days previously she was thrown down by one of her playmates, and was very severely hurt in the lower part of the belly by a blow from the knee. She says that she has been urinating blood every day since the accident.

The girl has intense fever, temperature 40·2 C. There is acute pain in the hypogastrium which is aggravated by pressure. The pain radiates towards the groin and the perineum, and gives to the patient the sensation of the necessity to urinate. The micturition is accompanied with burning pain. The urine, collected in a conical glass vessel, formed a considerable deposit composed of pus and albumen.

Aconite ℚ, 10 drops, was prescribed, and milk for diet. After some days of this treatment the fever fell considerably, on the seventh day the pain diminished, but the urine always presenting a little of the same deposit, I prescribed Cantharis (1st dil.) 3 drops; then gave 5 drops on the following days. Under this treatment the puriform deposit considerably diminished. The urine, never clear and always containing a certain quantity of albumin, caused no more pain during its emission.

On the 8th June the mother of the little patient took her away from the hospital in spite of our remonstrance. The girl was brought

again on the 13th June. She had fever, 38° in the morning and 39° —40° in the evening. She complained of acute pain in the right renal region. The urine had the same appearance that it had in the beginning of the disease. Aconite Ø, 10 drops. Under this treatment the fever decreased, the pains diminished, the urine became clear, and on the 18th the temp. came down to 37.° Cantharis was then prescribed. On the 20th the febrile movement became accentuated again, it was remittent, the temp. being 38 in the morning and 39 to 39·5 in the evening. At the same time the right kidney was seized with marked pain. Aconite Ø was given again. The amelioration again appeared under its influence. The pain of the left side disappeared, the urine became clear, and the temp. fell to 37. Cantharis, first dil. 3 drops, was again given. But on the 26th June, after three days of apyrexia, the temp. rose to 39, then oscillated to near 38. The pains did not come back. The urine was turbid, and contained mucus and albumen as also casts of renal tubuli. The patient was put again on Aconite (mother tincture).

The febrile movement continuing decidedly remittent, Sulphate of Quinine, $\frac{1}{2}$ gramme, was prescribed once in the morning of the 1st and 3rd July.

The Sulphate of Quinine did not produce any effect, the febrile movement continuing remittent and of the same intensity. There was, however, no renal pain, even from great pressure: the albumen disappeared from the urine which still contained a certain quantity of mucus. Veratrum Viride, mother tincture, 3 drops, was prescribed. This medicine, continued for three days, had no effect upon the fever. On the 6th July I prescribed Arsenic (3rd), 1-5th of a gramme. The fever ceased from the first day of this medicine which was continued; the urine cleared, and the girl appeared to be in convalescence. The examination of the urine for the bacillus of Koch was absolutely negative. The Arsenic was continued, and there was improvement in the general and the local condition, and the patient became fairly convalescent.—*L'Art Medical*, Aug. 1900.

3. A Case of Acute Articular Rheumatism.

Mlle. Victorine, aged 31, was admitted into the Hospital of Saint-Jacques on the 15th June 1900. This woman, of a brown color and strong constitution, has been attacked since the 11th June with acute articular rheumatism with fever. At the time of her admission the articulations of the wrists were principally attacked, the pain was considerable, but there was little swelling. The temperature oscillated between 39 in the morning and 40 in the evening. The shoulders and the knees were then attacked. For five days the patient took

Aconite, mother tincture, 10 drops, without any effect either on the febrile movement or on the pains. Bryonia (6th dil., 2 drops) was prescribed on account of the pain being aggravated by the least movement. No action. I prescribed Sulphate of Quinine, 1 gramme was distributed in 4 tablets. The fever diminished immediately as also the pains. For the two days I increased the dose of Quinine to 1½ grammes in 4 tablets. On the second day of this dose the fever went up to 39. At the same time new joints were attacked. There was thus a relapse which the Quinine was impotent to prevent. I prescribed Aconite, mother tincture, 30 drops. This medicine continued for three days brought on a continuous defervescence from 39·2 to 37.

The Aconite was still continued for two days, associated with Belladonna (mother tincture). But the temperature rose further and the pains became intolerable. I went back to Quinine, 1 gramme in 4 tablets. But a severe diarrhœa, 10 to 12 stools in 24 hours, compelled me to interrupt this medicine for two or three days, which I replaced by Colchicum, mother tincture, 3 drops.

On the 7th July the diarrhœa having ceased, the pains being very intense, the temperature 39, I recommenced Sulphate of Quinine, 1 gramme in 4 tablets. From the following morning the fever fell to 37·5 to rise to 38 in the evening, at the same time the pains diminished from day to day. On the 14th July the patient was convalescent.

The heart, which was attentively watched during the whole course of the disease, remained free.

The action of Sulphate of Quinine was incontestible, rapid, acting at once upon the pains and upon the fever. In this case twenty-four hours was sufficient to establish its action. At the beginning of the 3rd week the pains and the fever returned though more moderately than in the beginning, but intense enough notwithstanding the Sulphate of Quinine. Why?

We have afterwards a notable action of Aconite in large doses upon the fever. In three days the temperature was reduced 2 degrees without oscillation. But the arthritis was not modified. We were unable to prescribe Sulphate of Quinine, because in these cases it augments the diarrhœa and does not develop its curative action. As soon as the patient was able to take Quinine its action was manifest at the end of twenty-four hours, and this time that action was decided and permanent.—*L'Art Medical*, Sept., 1900.

CASE OF PROLONGED HIGH TEMPERATURE.

By J. CALL-WEDDELL, M.D., Edin., Sunderland.

R. de R., æt. 24, publican's manager, of temperate habits, sent for me early on May 1st with a message to bring a sleeping draught. On visiting him at 7 A.M. I found him in bed, with a temperature of 102 F, pulse 89. Tongue furred and bowels constipated, complaining of intense pain over the left temple and eye, which was much inflamed (having lost the sight of this eye from an accident when a youth, he generally suffers from this when out of health). His wife had administered an aperient before my arrival. Aco. (1) was left, to be taken every two hours, and also a couple of "Bromidia" draughts, as directed, as he declared that he had not slept for nearly a week.

2nd May.—Has slept altogether for nearly 4 hours and felt better. Bowels relieved. T. 103, P. 80. Continue medicine. On telling him that his temperature was still high, he remarked that it had been higher during the week, but he had been unable to lie-up, as he had just removed into this public house, and had been very busy helping to clean out his cellars, which he found in a "filthy, stinking condition, they evidently had not been turned out for years."

3rd. Head and eye much better. T. 104, P. 100. Suspecting it to be a case of influenza (which was about at the time), I now substituted for the Aconite, Gels. (1) to be taken in the same way. Had a good night's rest without any bromidia.

4th. T. 105.2, P. 100. No discomfort, pain or thirst.

5th. T. 105, P. 120. Has slept well.

6th. T. 104.8, P. 110. Feels "all right." Found a little niece in bed, who had come on a visit, convalescent from measles.

7th. T. 105.4, P. 120. No discomfort. Verat. v. (1) every 2 hours.

8th. T. 104.8, P. 100. "Had a capital night."

9th. T. 103.6, P. 100. "Feels all right."

10th. T. 104.8, P. 100. No complaint, Bapt. t. (1x) every 2 hours. Finding, to my surprise, that he was taking food as usual, I put him on milk diet and cautioned him to be careful.

11th. T. 105.5, P. 90. Had slept well, felt no special discomfort.

12th. T. 104.8, P. 90. A good night.

13th. T. 102.5, P. 80. Asked me to look at his chest, now covered with a slight rash. Puls. (3x) every 2 hours.

14th. T. 103. Measle rash well out over chest, abdomen and back. No traces on face, which is somewhat paler than usual.

15th. T. 101.8. Rash well out, also on thighs and legs.

16th. T. 100. Found him up. From this onward he made a good

convalescence. No chest complications or catarrh arose. In fact a cough to which he had long been subject has disappeared. His bowels were constipated during most of the illness, and had to be relieved, from time to time, by some aperient, which he was in the habit of taking. The urine was dark-colored, otherwise normal, and had no albumin. He was now rendered a little thirsty, for the first time, by rather copious perspirations, which he found only came on, when he fell asleep for the second time, about 7 A.M.

For three or four days after the 16th his temperature was found to be several points sub-normal; during this time Arsen. (3) was taken every 2 hours. He was kept indoors for a few days and soon regained strength.

(On the 18th a baby, one year old, who had slept in the same room developed measles and bronchitis, and made a good recovery.)

R. de R's case is peculiar in that the temperature did not come down till the measles appeared. The infection of that disease was probably not conveyed till the girl's visit on the 6th. The continued high temperature appeared to produce little inconvenience, for during at least a fortnight he was kept in bed with some persuasion, after the first few days, as he declared that there was not much the matter with him. Several times when it stood at 105 he would say, "Now Dr. I know it is down to normal this morning, you will let me get up to-day?"

Throughout there was not a sign of delirium, indeed his intellect was wonderfully clear. No splenic enlargement occurred and no lung complications.

The temperature was taken in the morning most days and at others in the evening, and was found mostly higher in the mornings.

Another peculiarity of the case was that there was no loss of appetite and little or no thirst till the sweatings took place.

He was much stronger on his feet than I expected to find him. During the illness he lost two stones in weight.

The case was evidently more than measles—query what?—*Monthly Homœopathic Review*, Sept. 1900.

[In reply to Dr. Call-Weddell's query, we would suggest that it was one of those peculiar cases of influenza, of which we have seen several examples, in which the temperature keeps persistently high, sometimes much longer than in the above case, with absolutely no complications, and the patient averring that he is feeling quite well. In such cases it is not uncommon, to find a measly looking rash. In the above case we venture to suggest to Dr. Weddell that as the girl only came on

the 6th and the rash appeared seven days after, it could not have been true measles.—*Eds.*, M.H.R.]

[Might not the rash of measles, in this case, have been delayed in appearing owing to the constitution being already invaded by another disease, the influenza, the incubation of measles being prolonged? The fact that a baby caught the infection and developed measles a few days after, shows that the eruption in R. de R. was most likely that of true measles.—EDITOR, *Cal. J. Med.*]

CASES BY DR. A. H. GORDON, M.D.

1. A Case of Apocynum Cannabinum.

March 22, 1900, Mr. M., aged fifty, applied at the office for treatment of stomach trouble. The "stomach trouble" proved to be a typical case of typhoid fever of great severity, and the patient to be a man addicted to the use of alcoholic beverages to excess. The fever dragged its slow course along for six weeks under the usual remedies, when a peculiar, and to me, an unusual complication occurred, after the fever had apparently run its course, as the temp. had been normal or only slightly above for some time.

The complication consisted of a general dropsy, commencing with the extremities and rapidly extending over the entire body. The accumulation in the thoracic and abdominal cavities was very great, interfering with the function of respiration and the heart's action to such an extent as to excite the gravest doubts as to the patient's ability to survive the attacks of dyspnea, which were becoming more and more frequent. Attendant symptoms were obstinate constipation and partial suppression of the urine, the daily quantity varying from ten to twenty-two ounces.

Clinical and microscopical examination of the urine, repeated many times, failed to disclose any disease of the kidneys. The heart and lungs were also found to be normal, although laboring under difficulties on account of the hydrothorax.

Many, apparently well indicated, remedies were administered, and expedients adopted with only temporary relief and an immediate return of the alarming condition.

Finally, a careful study of our materia medica revealed the fact that of all the remedies used in dropsical affections, the totality of the symptoms seemed to point to apocynum cannabinum as the indicated remedy. "The general dropsical condition of the drug, ascites, hydrothorax, anasarca, the sense of oppression about the epigastrium and

the chest, the short dry cough, the excretions diminished, especially urine and sweat, dropsy, with thirst, but drinking causes pain or vomiting, cases usually uncomplicated with organic diseases" (in this case note that no lesion of heart, lungs or kidneys could be demonstrated) "after typhus, typhoid, scarlatina, etc."

All of these conditions were present, making as complete and perfect a drug picture as one could ask for; so the remedy was accordingly administered, not with the confidence that the writer usually administers well indicated homœopathic remedies, however, for Apocynum had been used by him with indifferent results on many previous occasions. In order to give it a fair trial in this case, a fresh and reliable preparation of the drug was secured and its effects carefully noted.

There was no sudden change for the better, but the patient held his own for several days; then the secretions gradually began to be reestablished. The quantity of urine passed in twenty-four hours reached thirty-two to thirty-six ounces. The hydrothorax and ascites next disappeared, the anasarca following except in the feet, where the swelling remained for about four weeks, disappearing at night when in bed, but reappearing during the daytime with great regularity as soon as he assumed an upright position. It was finally controlled by bandaging, and the medicine being continued, he is now able to do light work and is about well. One thing noticeable in the case was that the Apocynum had apparently no effect on the obstinate constipation which existed. It was therefore necessary to relieve the same by frequent high rectal enemas.

This case is only one more example of the power of the indicated homœopathic remedy to snatch the sufferer from the jaws of death; but it gives one a mighty determination to search out the remedy to the everlasting benefit of our patients, and the glorification of our law of drug action and its discoverer, Samuel Hahnemann.

2. A Case of Crategus in a Heart Case.

I owe an apology to the society for appearing before you for a second time as an advocate of the remedy used in the next case cited. I cannot resist the temptation, however, of recording another brilliant success in the use of this drug, especially as several of the noted physicians of our school in recent papers read before the Chicago Homœopathic Medical Society and the Illinois Homœopathic Medical Association have seemed to give the impression that it was of very little value.

December 3, '99, was called upon to visit Mr. H., of this city, who

had been afflicted with heart disease for many years; occupation, travelling salesman; age about thirty-eight years.

He had been attended by the most eminent physicians of the country, in the East as well as the West, his last physician being a prominent old school doctor of Chicago, who had given up the case, informing the family and friends that it was only a question of a few days when the final end must come.

I found the patient confined to bed, cyanotic, his limbs enormously swollen, almost complete suppression of urine, a very rapid intermittent, irregular, and at times, almost imperceptible pulse. He was not able to raise himself in bed without immediate symptoms of collapse appearing; he spoke with great difficulty, and in fact, presented a perfect picture of approaching dissolution from heart failure.

An examination of the chest showed an enormously enlarged and dilated heart with leakage, regurgitation of the aortic and mitral insufficiency. It is in just such cases as these that I have seen Crategus oxyacantha exert its wonderful powers, and I administered it to this dying man, having assured the friends that although the case was seemingly hopeless, I had known it to have restored compensation in many similar cases.

He received Crategus in the usual dose every three hours day and night for four days, and no other medicine of any kind. At the expiration of that time he was sitting up in bed, dropsy having entirely disappeared, urinary secretion restored, pulse fairly good, respiration unimpeded, appetite very good, skin normal in appearance, a complete restoration of compensation and a new lease of life for Mr. H.

I received a letter from him six weeks afterwards from a Western city asking for another prescription, and a report April 7 of this year to the effect that he was as well as he had been for years and able to attend to his business as usual.

I bring this case to the attention of the members of the society, hoping that when you are confronted by death in the guise of failure of compensation in heart disease, you will not fail to remember that Crategus oxyacanthus will oft-times restore the equilibrium of the circulatory apparatus, and thereby prolong a useful life.—*Clinique.* August 15, 1900.

Gleanings from Contemporary Literature.

SOME INCIDENTS IN THE EVOLUTION OF THE MODERN PHYSICIAN.

President's Address delivered at the Sixty-Eighth Annual Meeting of the British Medical Association.

By William Alfred Elliston, M.D.,
Senior Surgeon, East Suffolk and Ipswich Hospital.

I beg to welcome you most heartily to East Anglia, and to assure you that we highly appreciate the honour conferred upon us by your selection to hold your sixty-eighth annual meeting in this town.

It is twenty-six years ago since this great Association met in East Anglia, in the city of Norwich, and it speaks for its ever-growing importance and utility that on that occasion there were some 6,000 members only, and the scientific business of the meeting was conducted in four sections. On this occasion the first meeting of the nineteen hundreds, the members have increased to over 18,000, of whom 4,000 are members of our Colonial Branches, and the scientific work needs thirteen sections.

The many important subjects that have been laboriously and carefully arranged for discussion by the secretaries of the various Sections will, I feel sure, result in the acquirement of information of most valuable material for future observation. It is a matter of great congratulation that the Committees who are responsible for the organisation of this meeting have succeeded in obtaining the assistance of so brilliant a staff of officers of Sections, embracing distinguished names of world-wide reputation, and that they are promised also the assistance of many of the more celebrated of the seniors of the profession.

The town in which we are assembled is one of much commercial importance. Manufacturers and merchants do a considerable business with many of our colonies. It is an ancient town, and there are many beautiful specimens of old houses, gateways, and corner posts. To those who desire a better acquaintance with its history I would refer them to *Round About Ipswich*, by the late Dr. J. E. Taylor; *Annals of Ipswich*, by Nathaniel Bacon; and *Old Corner Posts*, by Mr. J. S. Corder, recently published. Great Englishmen have been associated with Ipswich in the past. Nicholas Bacon, the Lord Keeper, was a Freeman of Ipswich; his younger son, Lord Bacon, represented Ipswich in two Parliaments, and in more recent times Lord Nelson was High Steward. Thomas Gainsborough lived and painted here. Charles Dickens found Ipswich to be worthy of many scenes for his fertile pen; but the personal association which throws lustre upon Ipswich is the fact that the famous cardinal Wolsey was born here. It is still, I think, a standing reproach to Ipswich that there is no monument to his memory, except one that he built himself, and which is the sole remains of the great College he intended to have raised at Ipswich.

Among the illustrious medical names associated with East Anglia are William Gilbert, Sir Thomas Browne, Edward Rigby, J. G. Crosse, Sir Astley Cooper, the Brothers Paget, Sir Thomas Watson (educated at Bury St. Edmunds), Jeaffreson (ovariotomist), Sir William Gull, John Hilton, Sir George Humphry, and many others, while among those yet living are some of the foremost names in the science of medicine.

Since the last annual meeting this Association has lost two members of great distinction, one full of years, "who had laboured well far into the evening of life"; and the other cut short in his career, but yet with a record of great distinction. All who were present at the Edinburgh meeting in 1898 will remember the cordial hospitality of the President, Sir Thomas Grainger Stewart, and the conspicuous ability with which he conducted the business of that large gathering. In the death of Sir James Paget the profession has lost one of the greatest and most philosophic surgeons of the age, and East Anglia one of her most illustrious sons. His high character and great learning alike endeared him to the whole profession. His early scientific contributions, and particularly his discovery of the trichina spiralis in muscle while yet a student at St. Bartholomew's, gave promise of a career which has been fully realised.

The task of selecting a subject upon which to crave your indulgence, and not to unduly tax your patience, has been to me one of some anxiety. It is a matter of satisfaction that these troubles are not confined to Presidents of this Association. For instance, it is recorded of a very distinguished surgeon, who was appointed to deliver the Hunterian oration at the royal College of Surgeons, that anxious possibly to go upon fresh lines he commenced with a historical prelude so long that he never once mentioned the great surgeon he was desired to laudate, nor had he in the prescribed time arrived at the century in which he lived.

Development of British Medicine.

Reflecting with mixed feeling upon this experience, I propose to-night briefly to touch upon some incidents in the developments of the science of British medicine and the evolution of the modern physician. I use the term physician in its broadest sense of the type now considered an ideal one, as illustrated in literature by the rare delineature of Dr. Lydgate by George Eliot in *Middlemarch* and of Dr. Maclure by Ian Maclaren in *Beside the Bonnie Brier Bush*, and as admirably portrayed in art by Mr. Luke Fildes in his strikingly pathetic picture of "The Doctor."

The early history of medical science in this country is concurrent with the advance of all scientific knowledge. During the Dark Ages, men of learning had spent their time in translating and repeating what the Greeks had taught, until at last they had come to believe that Ptolemy, Galen, and Aristotle had settled most of the scientific questions, and that no one had any right to doubt their decisions.

In the annals of British science, there was one exception to the apathy of Englishmen—Roger Bacon, the Franciscan friar, who is stated to have been the first man in Europe to make gunpowder. Green speaks of him as living

before his time, but the probablity is that travelling and studying natural science, and particularly alchemy in Italy, he became imbued with ideas of scientific progress that were absolutely dormant in this country until 250 years later. This remarkable man, whose reputation suffers by confusion with the great lawyer and scientist Francis Bacon, published as early as 1240 his *Opus Majus;* in this he predicts that "One day ships will go on the waters without sails, and carriages run on the roads without horses, and that people will make machines to fly in the air." He seems to have known the theory of a telescope. He says, "We can place transparent bodies (that is, glasses) in such a position between the eyes and other objects, that the rays shall be refracted and bent towards any place we pleased, so that we shall see the object near at hand or at a distance under any angle we please, and thus from an incredible distance we may read the smallest letter and may number the smallest particles of sand, by reason of the greatness of the angle under which they appear."

While, therefore, down to the period of the commencement of the sixteenth century England had taken no share in the scientific advancement of the Continent, and for almost a hundred years later no discovery of any importance was due to English research, the profession was busy as a whole in acquiring protection for their rights and privileges.

Science and the New Learning.

The continuous progress of British science commenced with the return of Thomas Linacre to Oxford from the Italian universities, whence he came imbued with what was termed the "new learning," then recently introduced by the Greek professors, who had been attracted to Italy. At this time the learned of all countries were profoundly impressed by the recent discovery of America, by the scientific discoveries of such men as Copernicus and Paracelsus. The printing press was changing the conditions of life, and literature became the common property of all.

Green, the historian, says: "The sudden contact with new earths and new races of men quickened the slumbering intelligence of Europe into a strange curiosity. Books of voyage were greatly sought for, and among other works published at this time perhaps none had a more remarkable effect than the *Utopia* of the famous Lord Chancellor Sir Thomas More, which in its wide range of speculation on every subject of human thought and action tells us how roughly and utterly the narrowness and limitation of human life had been broken up." As a sanitary reformer he dwells upon the necessity for pure water, the structure and ventilation of the house, the garden at the back, the width of the street, the cleanliness of the house, the necessity of removing the infected sick to isolated hospitals, the food of the people, the necessary exercise, the care of the children, the necessity of abattoirs, and the well appointment of the hospitals, with all things necessary to health, and the continual presence there of "cunning phisitians;" and in short he points out that public morality and health spring from light, air, comfort, and cleanliness. At the time this book appeared it was markedly appropriate to the conditions then existing in

this country—the houses of the poor were mere hovels and scarcely fit for human habitation, the farmhouses and better class dwellings were mostly built of rough and wattled walls, while none but the largest houses possessed even the comfort of a chimmey.

Medical Corporations.

The great event in the sixteenth century, so far as medicine is concerned, was the success of Thomas Linacre in persuading the King to grant a charter to a small body of medical graduates, who were thenceforth called the Royal College of Physicians. He succeeded, it is said, principally through the great and powerful help of Cardinal Wolsey. The charter of the Royal College of Physicians was granted on September 23rd, 1518. It gave them the sole power to license to practise physic in London or within seven miles radius, with other privileges, which were confirmed by a statute of Henry VII, and extended to the whole of England. Linacre was the first President, and he held office to the end of his life.

In 1540 the barbers and surgeons were united by Act of Parliament 38 Henry VIII, cap. 42. They were incorporated as the "Maisters or Governors of the Mysterie and Commonalitie of Barbers and Surgeons of London." Thomas Vicary, Sergeant Surgeon to Henry VIII, who had been previously Master of the Barbers' Company, was the first Master of the combined companies. The company employed Holbein to paint a picture in which the King on his throne, with his two physicians Sir William Butts and Dr. John Chambre, with his apothecary kneeling on his right, presents the Act, which is painted with a seal as if it were a charter, to Vicary, who with 14 other Barbers and Surgeons, is on his knees. In 1543 the irregular practitioners of London were protected by Act, and became one of the corporations of that city, and both by royal charters and by Acts of Parliament exercised the power of granting licenses to practise medicine. In 1505 the Royal College of Surgeons of Edinburgh was founded, and in 1599 the Faculty of physicians and Surgeons of Glasgow.

Scientific Anatomy.

Soon after the birth of the new learning, the work of Vesalius, the brilliant young Belgian, aided by his contemporaries Fallopius and Eustachius, raised anatomy to a science based upon the dissection of the human body itself, in addition to that of animals.

That such real scientific advance was some time before it exercised its influence may be observed in the records of highly-esteemed practitioners of the day. Dr. Butler was a typical physician. He was born in Ipswich in 1537, and lived well into the seventeenth century. He was a Fellow of Clare College, Cambridge. He acquired an extraordinary reputation, and became in due course a Royal physician. He attended the Prince of Wales in his death illness, and was on one occasion summoned to Newmarket to attend upon the King. He is stated to have been the first Englishman who quickened Galenical physic with a touch of Paracelsus, trading in chemical receipts with great success.

About the same time Mr. George Bacon practised as a surgeon. He was

Master of the Barber Surgeons' Company in 1597. His contemporaries prophesied the lasting fame of his works. His great work is called *The Composition of Making the Most Excellent and Precious Oil called Oleum Magistrale, and the third book of Galen, a method of Curing Wounds and of the Errors of Surgeons.* He subsequently published *The Jewel of Health,* "wherein is contained the most excellent secretes of physic and philosophie, divided into foure bookes." He condemns the writing of a book in the vulgar tone. "I would not have," he says, "every ignorant asse to be made a chirurgeon by my booke, for they would do more harm with it than good."

In the sixteenth century there were already established physicians, surgeons, and apothecaries. The surgeons were associated in their Guild with the barbers, and the apothecaries with the grocers. While the physicians were men of education, cultured according to the education of the time, the surgeons and apothecaries were not a very highly-educated class, and they remained so, with few exceptions, until the rise of the nineteenth century.

Gilbert and Harvey.

It was at the very commencement of the seventeenth century that the original research of two great English physicians, Gilbert and Harvey, completely altered the position of our country in scientific advance. Hitherto there had been no contribution of importance; from this time, however, a complete change came over the scene; and from that day to this our countrymen have taken a conspicuous part in the solution of the many scientific problems and discoveries of the last three centuries. Our East Anglian county of Essex has the honour to be the birthplace of one of these illustrious physicians and the resting place of both. William Gilbert was born and buried at Colchester. At Holy Trinity Church there is a monument to his memory. He died unmarried, at the early age of 57, in 1603. William Harvey died in 1657, and was buried at Hempstead, in the same county, in his 80th year.

William Gilbert—or Gilberd, as it is spelt upon his mural tablet—was born at Colchester in the same year that Vesalius was appointed Professor of Anatomy at Padua—in 1546. He was educated at Cambridge, and became a Fellow of St. John's in 1561. In 1573 he settled in London, and became subsequently physician to Queen Elizabeth and President of the Royal College of Physicians. His leisure hours were given to chemistry and magnetism. In 1600 he published his *De Magnete.* He established the magnetic nature of the earth, and he conjectured that terrestrial magnetism and electricity were two allied emanations of a single force. He was the first to use the terms "electric force" and "electric attraction," and to point out that amber is not the only substance which when rubbed attracts light objects, and he described how to measure the excited electricity by means of an iron needle moving freely on a point. He described the properties of the magnet and its attraction and its direction in the relation of the poles of the earth. In relation to the fame of Gilbert and his researches, the poet Dryden wrote:

Gilbert shall live till lodestones cease to draw.

At the time of Gilbert's death there were three men living, all in the prime of life, who profoundly stirred the scientific world. Francis Bacon afterwards Lord Bacon, was 42 years of age, and was representing Ipswich in Parliament ; Galileo, 39 years of age, and had recently brought distant worlds into view with the telescope ; and William Harvey, the discoverer of the circulation of the blood, was 25 years of age. He was born at Folkestone, graduated at Cambridge, subsequently travelling through Germany and France, and enrolled himself as a student of the University of Padua. His name heads the list of what was called the Jurist University for the years 1600-02. There he studied under the celebrated surgeon and anatomist, Fabricius. Upon his return to London he joined the College of Physicians, and was shortly after his commencement of practice appointed Physician to St. Bartholomew's Hospital. In 1615 he was appointed Lumleian Lecturer, which he held with more or less interruption, due to the political disturbances of the times, until 1656. He was Physician to James I and Charles I.

There are many evidences that his eminence was appreciated by his contemporaries. In 1620 for instance, he attended a conference with representatives for the College of Physicians to protest against the proceedings of the surgeons, who were moving Parliament in their own interests, but he failed to induce his own university to co-operate with the College of Physicians. During the Civil War he was in attendance upon the King, and while quartered with him at Oxford he was elected Master of Merton.

The work of William Harvey, which has immortalised his name in the annals of medicine was published in the year 1621 at Frankfort as *An Anatomical Treatise on the Movement of the Heart and Blood in Animals.* Mr. D'Arcy Power, in his admirable contribution to the *Masters of Medicine,* says : "Harvey chose Frankfort as the place for the publication of his book because the annual book fair, held in the town, enabled a knowledge of his work to be more rapidly spread than if it had been issued in England."

His researches upon this subject had long occupied his attention and had been referred to from time to time in his Lumleian Lectures from the year 1606 onwards. The bent of his mind, and his method of departure is explained in his book, when he says, "I profess both to learn and to teach anatomy not from books, but from dissections ; not from the position of philosopher, but from the fabric of Nature." The results of Harvey's observations are the more remarkable when we consider the scanty instruments and appliances then available, contrasted with our own time, when the senses, the arts, and the sciences are all brought into requisition for the discovery and analysis of objective symptoms.

The microscope was as yet undiscovered. The number of pulse beats was not measured by a watch until nearly a century after Harvey's time. In his day, according to Dr Norman Moore, physicians contented themselves with estimating the character of the pulse rather than its precise rate. Specialism as now understood did not exist, and Harvey was a surgeon

as well as a physician. He performed surgical operations to which he frequently refers. The brilliant work of Galileo, Gilbert, and Harvey, the awakening philosophy of Francis Bacon in this country and Descartes in France gave an impetus to original research and the investigation of causes that was remarkable in upsetting ancient traditions, and little by little real observation and experiment took the place of mere authority.

The Royal Society.

It was about this time that a small body of students assembled at Oxford in 1645, who were later, in 1662, to be known as the Royal Society. It was established as an association of men interested in the development of mathematical and physical science. It is the oldest scientific society in Great Britain, and one of the oldest in Europe. Italy had already established two societies in the time of Galileo and Torricelli. In Germany the Imperial Academy of the Curious in Nature was founded in 1662. The famous French Academy of Science in 1666 was legally established by the French Government. All these societies greatly influenced scientific research and many men who were hitherto unable to publish, now read papers at their meetings.

Of our own Royal Society it is recorded in the first journal book of the Society, that these persons met together on November 28th, 1660, to hear Mr. Wren (afterwards Sir Christopher) lecture at Gresham College, London, mentioning twelve names, including three physicians, and that after the lecture they returned to converse and pass resolutions for future guidance. At one of their early meetings fifty-two was fixed as the number of the Society, persons of the rank of Baron, Fellows of the Royal College of Physicians, public professors of mathematics, physics, and natural philosophy of both Universities being supernumeraries. In October, 1660, the King offered to be entered one of the Society, and next year the Society was incorporated under the name of Royal Society, the charter of incorporation passing the Great Seal July 15th, 1662. Soon after incorporation the Royal Society published papers by Malpighi, who by the microscope revealed the minute infinite particles of living bodies.

Somewhat earlier than this two of our countrymen—Boyle, son of Lord Cork, and John Mayow—did much for progressive research, and anticipated some of the great discoveries in chemistry and physiology of a century later. Boyle proved that a candle could not burn nor an animal breathe without what was afterwards proved to be oxygen gas. These observations were said to have been attentively listened to at the early Oxford meetings of Wilkins and his friend by a young physician, John Mayow, who died at the early age of 34, but not before he had proved that air was made up of two portions, that one heavy, which supports flame and light, which he called fire air, and which was subsequently discovered to be oxygen; the other light, useless for living and breathing, and this was the larger portion which we now call nitrogen.

Practical Medicine.

Practical medicine in Great Britain was developing in this century; a

Pharmacopœia had been issued ; cinchona bark was introduced ; botanical gardens were established. The teachings of Francis Lord Bacon, and subsequently John Locke, influenced the direction of thought, while the great learning and superb common sense of that great physician, Sydenham, gave effect to the general advance of the period.

In surgery the growth was slow, principally through the general want of knowledge of anatomy acquired by dissection ; but two Englishmen had distinguished themselves in this branch—Nathaniel Highmore and Thomas Wharton—the former discovering the cavity in the superior maxillary bone, still known by his name ; and Thomas Wharton, who discovered the duct of the maxillary gland, which is still recognised as Wharton's duct. The diary of Mr. Samuel Pepys illustrates the primitive method of procedure at that time : he says that "on February 27th, 1663, he walked with Commissioner Pett to Chirurgeon's Hall, we being all invited thither and promised to dine there, where we were led into the theatre, and by-and-bye came the reader, Dr. Tearne, with the master and Company, in a very handsome manner, and all being settled, he commenced his lecture, and his discourse being ended, we had a fine dinner and good learned company, many doctors of physic, and we used with extraordinary great respect." He also speaks of the gilt cup the gift of Henry VIII., with bells hanging at it, which every man has to ring by shaking after he had drunk up the whole cup. There is also a very excellent piece of the King, by Holbein, that stands up in the Hall, with the officer of the Court kneeling to him to receive the charter.

In medical politics a warm contest arose between the physicians and apothecaries, the former accusing the apothecaries of usurping their province, the latter continuing and justifying the usurpation, until the matter was formally settled by the House of Lords in 1703, when it was decided that the duty of the apothecary not only consisted in compounding and dispensing, but also in directing and ordering the remedies employed in the treatment of disease.

Boerhaave and Hales.

The man who of all others at the early part of the eighteenth century gave an impetus to medical education was the illustrious Boerhaave, who at the University of Leyden attracted students from all parts, and particularly from this country. He was elected Lecturer in 1701, and a few years later occupied the Chair of Chemistry. He shares with Dr. Hales, the great English chemist, the honour of founding the science of organic chemistry. So highly was Boerhaave esteemed by his fellow-countrymen that upon his recovery from a serious illness in 1722 there was a general illumination of the town of Leyden.

At this time there was practically no systematic medical training in the British Isles, but there were isolated attempts at special instruction. A refugee surgeon, Brussiere, settled in England in the time of Queen Anne, and for the first time gave lectures in anatomy in England. In 1711 Dr. Richard Mead lectured and continued his lectures for four years to the

Barber Surgeons. In the same year Cheselden commenced a series of lectures which continued for twenty years. The first Munro opened a similar course at Edinburgh. John Rutherford settled in the same city in 1721. Speaking of him, his grandson, Sir Walter Scott, says, "he was one of those pupils of Boerhaave to whom the school of medicine in our Northern metropolis owes its rise." Together with Sinclair, Purvis, and Innes he established a laboratory and taught the rudiments of chemistry and other branches of physics. In 1766 Rutherford was appointed Lecturer in Medicine, and until 1785 he delivered them in Latin. He founded clinical teaching in Edinburgh. The success was so great that the Manager of the Royal Infirmary appointed a special ward to the exclusive use of Rutherford. This laid the foundation of that form of teaching in which Edinburgh has held proud pre-eminence.

Increased Study of Anatomy.

Speaking of the history of medicine at this period Lecky says, "a still more important fact in the history of medicine was the increased study of anatomy. The popular prejudice against dissection, which had for centuries paralysed and almost prevented this study, still ran so high in England that in spite of the number of capital punishments it was only with great difficulty the civil power could accommodate surgeons with proper subjects, and all publicity was studiously avoided. With such a state of feeling it is not surprising that the English Medical School in the beginning of the eighteenth century should have been far inferior to that which gathered round the chair of Boerhaave at Leyden."

In London there was no concrete medical school until quite late in the century. William Hunter came to London and commenced to lecture in 1747, he became a member of the Corporation of Surgeons, was appointed Obstetric Physician to the Middlesex Hospital in 1742. He is stated to have been an early riser and a man of untiring energies. He was undoubtedly the first great teacher of anatomy in London, and we owe his selection and advance to Dr. James Douglas, an anatomist and obstetrician whose name is associated with to this day, by modern anatomists, as the discoverer of Douglas's pouch.

The advancement of medicine and the allied sciences in the eighteenth century commenced with the contributions of Boerhaave and Hales to organic chemistry, while Buffon taught natural history, and the Swede Linnæus patiently worked out the minute characters of animals and plants. In physics, the Scotch physician Black proved the amount of heat dormant in water and steam, which Watt afterwards applied to the steam engine. Electricity, was greatly advanced by Benjamin Franklin, the American, who attracted lightning from the sky and worked with it in his own laboratory. Galvani found the wonderful power hidden in the nerves of the frog, and Volta showed how powerful electricity could be produced by two metals placed in acid and water, and this could be carried along a wire of any length which touches the battery at both ends. In physiology great advances were made by Haller, Bonnet, and Spallanzani. John Hunter, by

his untiring energy, industry, and perseverance founded the science of comparative anatomy, and as an anatomist and as a practical surgeon built himself an everlasting fame.

Birth of Chemistry.

The most remarkable scientific advance was undoubtedly in the science of chemistry. Almost to the last quarter of the century the theory of "phlogiston" had confused and mystified the researches of the many great and distinguished scientists who had worked in this direction. It is highly satisfactory to note the important part played by our countrymen in the elucidation of truth. The discovery of the gases which enter into the combination of air, water, and fire transferred the alchemy of old into the modern science of chemistry. It was due to the discovery of Black, Priestley and Cavendish, and the independent work on similar lines of the great Swedish chemist, Scheele- himself a practising apothecary—that enabled Lavoisier to recognise the value of their discoveries and proclaim their effects upon science in his *Elements of Chemistry*. At the early age of 51 this philosophical chemist was guillotined by his countrymen in 1794, during the French Revolution.

Black discovered carbonic acid in 1756, Cavendish hydrogen in 1766, Rutherford nitrogen in 1772 ; and it was not until 1774 that Priestley—a Nonconformist minister at Leeds— discovered oxygen. It was also independently discovered by Scheele in 1775. They both deserve credit. Priestley's discovery was made with red oxide of mercury ; he heated it, and found that a gas came off, which he collected and he experimented with two mice, and he found that they breathed it and lived much longer than in ordinary air ; then he breathed it himself, and found he felt singularly light and easy for some time after. "Who can tell," he writes, "whether this pure air may not become a fashionable luxury ! As yet, only two mice and myself have had the privilege of breathing it." It is only of recent years that the great value of the inhalation of oxygen gas has been recognised and utilised in the treatment of certain diseases of the heart and lungs. I think many of us could bear testimony to its life-saving properties in cases which appeared hopeless.

Progressive Medicine.

Practical medicine was greatly advanced. As early as 1703, Dr. Richard Mead communicated to the Royal Society an account of Borrows's discovery of the acarus scabiei, up to that time considered to be a constitutional disorder. It was then disbelieved in England though recognised in Italy as early as 1687. This distinguished physician, of whom Dr. Johnson said, "Mead lived more in the broad sunshine of life than almost any man," was accustomed to drive six horses to Windsor and he held consultations at coffee houses. Other physicians of whom Dr. Johnson spoke in terms of warm approbation, were the elder Heberden, and of his great friend Dr. Robert James, who did not think it beneath his dignity to take out letters patent for his famous powder in 1746. Dr. Lettsom, one of the most successful of the long roll of Quaker physicians, lived well into the nine-

teenth century. It is recorded of him that he occupied himself with carefully studying and taking note of the cases at St. Thomas's Hospital, at that time an unusual practice, and not pursued by any other pupil of the hospital.

Dr. James Lind was one of the thinkers of the century, and deserves to be remembered. He was a surgeon in the Navy in 1739, and took his M.D. in Edinburgh in 1742. He published a treatise on scurvy in 1754. More men died of scurvy in the naval wars preceding its publication than were killed in all the engagements of the French and Spanish fleets. The book attracted great attention at home and abroad. He suggested the use of fruit and vegetables and lemon juice. It was not, however, until some forty years later that an order was issued by the Admiralty for its use. In 1761 he discovered that the steam of salt water was fresh, and gave a demonstration of the fact before the Portsmouth Academy in 1761, and subsequently before the Royal Society. Dr. Lind's views as to the treatment and prevention of scurvy have held until the present day, although the experiences of Nansen and the Jackson-Harmsworth Expedition suggests the necessity of some modification of his views.

The ravages of small-pox were attempted to be arrested by the introduction of grafting the disease itself, and, as far as the individual was concerned the mortality was enormously reduced; but unfortunately those persons having the disease so mildly were a great source of danger to the community. Towards the end of the century Dr. Edward Jenner, one of the most distinguished of the pupils of John Hunter, completed his observations upon the prophylactic power of cow-pox against the virulence of small-pox, and, in the opinion of the great majority of the medical profession of all countries, his discovery deserves the gratitude of the human race. I recently attended a nonagenarian lady who was born at Berkeley, and who well remembered Dr. Jenner as the medical attendant and friend of her mother, the Lady Berkeley of that day.

It was quite at the end of the century that Dr. Matthew Baillie, whose labours extended through the first quarter of the century now rapidly drawing to a close, published his *Morbid Anatomy* of some of the most important parts of the human body. It was the first book on the subject in English and excelled any of the previous Latin treatises in lucidity. It was the first book in which morbid anatomy was treated by itself. In this work he described ulcers of the stomach and of typhoid. He defined the change of the liver in cirrhosis. He described and differentiated various abdominal cysts and other important pathological observations. He was a distinguished member of a distinguished family, his mother being a sister of William and John Hunter. He was appointed physician of St. George's Hospital in 1787.

The development of practical surgery was carried on on less distinct lines in Great Britain than elsewhere and particularly in Paris, where the Academy of Surgery in 1731 set up a very high standard from the first. However, the brilliant ability of many individual surgeons—such as

Cheselden; of John Freke of Bartholomew's, first to treat empyema by incision; Dale Ingram, the first surgeon to treat abdominal wounds on modern lines; the eminence and ability of Percival Pott, who published his works after a severe accident when 43 years of age; the transcendent genius of his pupil John Hunter, who was also the same age before he published his first book; and the sound and scientific work of Cline. All these distinguished surgeons of the metropolis, as well as many provincial surgeons—such as White of Manchester, Gooch of Norwich, Hey of Leeds, and Parks of Liverpool, helped to establish surgery as a scientific branch of medicine.—*Brit. Med. Journ.*, August 4, 1900.

(To be continued.)

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NOTES ON PLAGUE.*

By MAJOR H. E. DEANE, of Calcutta;
Royal Army Medical Corps.

BEFORE dealing with plague specifically in Calcutta it will be advantageous to consider epidemics of plague in other places, and what lessons can be learned from previous experience of this disease. We have to deal with a specific, febrile, infectious disorder, and plague presents the difficulties common to the other infectious diseases, with difficulties peculiar to itself, such as the length of time during which it will persist and recur in a place and its disregard of any measures adopted for its abolition or cure. There have been more epidemics of plague in the world than of any other disease; and it has been widely spread, devastating whole populations.

General view.—It is believed to have first appeared in the Delta of the Nile, in A.D. 542, and spread over Egypt to Constantinople, where it is said 10,000 people died in one day. It spread over the whole Roman Empire and north of Africa in the succeeding century. In the fourteenth century nearly the whole

* These Notes are so valuable that, though they originally appeared in *The Medical News* of New York for Feb. 24 and March 3, and subsequently reprinted in the *Monthly Homœopathic Review* for September and October, we have not hesitated to give them a prominent place in our Journal.—ED., *Cal. J. Med.*

of Europe and England were over-run by the plague, one-fourth of the population of Europe, 25,000,000, being estimated to have died. It recurred in the fifteenth century in Europe and England, and Henry VII. left London for France on account of a bad epidemic there. The same story is told of the sixteenth century, in which 1000 people died weekly of plague in London during an epidemic in 1563-64. The last case reported in England was in 1679, and during the 76 years between 1603-79 plague was absent from the death returns on four occasions only, in 1629, 1633, 1635 and 1670; the total mortality being 188,571. From towards the end of the seventeenth century the disease showed a tendency to retrocede eastward, and although during this and the eighteenth centuries it was prevalent in France and other parts of Europe, the areas affected were much diminished. In this nineteenth century there have been more or less severe outbreaks over limited areas of Europe and in Persia; the last appearance in Europe being in the Russian epidemic of 1878-79. This will show the lengthy period over which the disease will manifest itself, and no subsequent history is calculated to lead us to suppose we can get rid of the disease after one outbreak, in other words "stamp out" the plague, a phrase which has often been in some men's mouths in India since 1896. Take, again, the outbreak in Ahmedabad, in 1618, said to have started in the Punjab in 1611, and lasting for eight years; again starting in 1812 in Cutch and spreading to Ahmedabad, devastating large tracts of country till 1821; the next outbreak at Pali, in 1836, lasted till 1838, killing 60,000 people. The first accounts of trustworthy details of plague in India refer to this epidemic in Cutch, which broke out at a time succeeding a severe famine.

The origin of the disease is a mystery, but the origin of other well-understood diseases, *e.g.*, syphilis, is also unknown. The conditions favouring the persistence of plague when once it is introduced present a uniform consistency, and there is no material deviation in the observations of authorities as to what they are, although as such conditions existed before the disease manifested itself, and continued after its cessation, they help us to no solution as to its origin. The conditions are want of light and air, overcrowding and poverty, and the very often accompanying personal and general surrounding filth. In exemplification I may quote one remark about the people of Dholera, a locality affected during the above-mentioned epidemic in Cutch: "They wear large quantities of clothes which are not changed till they drop off rotten with filth. The filth is ingrained in their skins." The disease as regards one point particularly is like typhus, in that it attacks people living on the ground floor of a house much more than, and in decreasing ratio with, those living in the higher

ones. This fact was observed in Bombay in the epidemic 1896-97, but may be partly accounted for by more over-crowding on the ground floors. An instance may be given from the Cutch epidemic. Among the places to which it spread was Moroi. A medical officer who reported on the outbreak says that the Thakur's palace, containing about one hundred people, escaped completely. It was a large well-aired place, elevated above the other parts of the town. Equal immunity was enjoyed by a small village situated on the opposite side of the river less than a quarter of a mile away on a very high and exposed situation, although there was daily and hourly communication between the village and the infected town.

There is nothing in the history of plague to show that climatic conditions have any effect upon its progress or cessation. It has prevailed in hot, cold, dry, and wet seasons, and any changes in the prevalence of the disease at certain seasonal variations seem to be purely coincidental, and determined by the natural course of epidemics, ascent, height, and descent. To sum the case up briefly, after a study of the conditions under which plague has prevailed, we are not advanced beyond the knowledge that other infectious diseases, such as typhus, have prevailed under similar conditions, poor, ill-fed, dirty populations living in crowds with absence of light and air. Improvement in such conditions in Europe, improvements which have taken generations to effect, may reasonably be said to have caused the retrocession of plague thence.

Mode of transmission.—Although the origin of infection may defy elucidation, once the disease has manifested its presence, opportunities occur for observing the method of its transmission from person to person, and place to place. More or less definite modes of spread have been determined for various of the infective fevers. Allowing that each infective disease has a poisonous entity outside the body, it is wide of the purpose of this article to discuss the mode of entry of such into the body, as we cannot expect to know of plague yet what we know of none of the infectious diseases, that is, how the poison enters the system. One point I may just refer to, as it seems proved in some men's minds. The preponderance of Femoral buboes in plague is supposed to show that the infection took place through abrasions or cuts on the feet; personally I have not been able to find such abrasions, and the only cases in which there was a solution of continuity of the skin affording a possible channel of entry, the bubo in the femoral region was on the opposite side. In one hospital in Bombay in 1897 the inguinal buboes on the left side were more frequent than the femoral on the same side. The next most frequent sites for the buboes are the inguinal and axillary

regions. The latter might be accounted for by infection from the hands; but I take the question to be entirely one of "might be." The same order of frequency as to the position of buboes is being observed in the Oporto outbreak at the present time, and it is not stated to be the case that the population all go bare-footed.

To return to the subject of the means of transmission. I think here we cannot separate sharply contagion and infection, and I propose including the former in the latter term. The first point to consider is the communication of the disease from the affected to those in immediate contact. It is almost impossible to judge of the extent to which this may take place during the height of an epidemic, as in a large freely intermingling population one cannot trace the direct connection, and many persons may become infected from a common source apart from any contact with those suffering from the disease. But in the early stages there are greater facilities for proving this mode of transmission. There is clear evidence as to the circumstances under which such transmission will and will not prevail. To take the former case first, ten people assembled every night at a house in Calcutta for gunja smoking. On March 16, 1899, *A* fell ill with plague, and died on the 20th. (For simplification I will use alphabetical letters.) On March 22nd *B* who lived elsewhere became ill and died on the 26th. *C* and *D*, after a week's illness, died on March 28th and 29th, and *E* died on the 30th, all elsewhere. *F* fell ill at his house elsewhere on the 27th and died on March 28th, and *F's* wife was taken ill on March 30th and died on April 2nd. They had two sons who, after the mother's death, left the house and went to live elsewhere, and one of them developed plague on April 5th and died on the 7th. This case, details of which were obtained after great trouble by Dr. Justice, in charge of the district, shows how infection can be carried by human beings; except in the cases noted, no spread could be traced from the infected people, although such may have been the case. The facts related, while distinctly showing that the infection can be carried from man to man, also exemplifies the comparatively small part such a method plays. Opinions may differ as to the extent the disease is spread by direct personal transmission, under the conditions of dirt, and over-crowding in ill-lighted and ill-ventilated habitations. French physicians who studied an epidemic in Egypt in the early part of this century declared against the disease being contagious. However this may be, there has long been an unanimous opinion that under conditions of light and air, plague infection is at a *minimum*. Going back to the plague in Pàli, in 1836, Dr. Rennie, in his report, says: "I feel no hesitation in professing my belief that a man in sound

health, provided he continued to breathe pure air, might safely keep his hand a whole day in contact with any one suffering from the Pali fever; but, if he sat within the same hut and inhaled the same tainted atmosphere half the time, he would probably be seized with similar illness. None of the medical officers, or even native assistants, who handled patients affected with the Pali disease and felt their pulse for days and weeks have suffered."

To give instances in later times, in a plague hospital in Bombay, in 1897, of about 400 people who visited patients, and in some instances remained constantly with them, not one contracted plague; and I have known a relative to sit on a bed with her arms round the patient for hours without becoming infected. Hospital attendants have been affected, but in a very small proportion. When one considers how a hospital must literally reek with infection, it is not surprising that some individuals, constantly breathing the air for weeks and months together, and in contact with various secretions, should contract the disease, especially if the health was impaired, as has been the case in the instances where European Medical men have contracted plague in India and died. Every plague hospital displays the same immunity of visitors, relatives in constant attendance, and the hospital staff. Another point bearing on the same subject is that persons removed to a segregation camp from any infected locality cease to suffer from the disease. In the camp contiguous to the Plague Hospital at Bangalore, of which I had charge in 1898-99, there were 1,598 people admitted of whom 51 developed plague, and the large majority of those in the first day after segregation, having evidently been infected on admission. These people took the same clothes to the camp as they wore at home. It is needless to multiply instances. This is sufficient to allow us to make one positive assertion about the plague, *i.e.*, that the source of infection is deprived of virulence by exposure to light and air, and, moreover, kindly lends itself very easily to such modifying influence.

We are naturally led now to the next step in the causation of infection, *viz.*, *fomites*. I will give two instances which bear on this. One is related by Hirsch as having occurred at Wetljanka in 1878, 1879. All the inhabitants of a certain house died, and two months after a box of clothing, which had not been touched previously, was sent to another house, the epidemic having disappeared. A girl took some of the clothing and set to work on it, and four days later she developed plague. One other instance occurred in 1897 during the Bombay epidemic. A vessel embarked a crew at Bombay on the 20th of August and arrived in the Thames on September 11th. There were between 300 and 400 passengers on board, and no suspicion of plague had arisen.

On the 26th or 27th of September one of the Goanese stewards became ill and died on October 3rd. Another steward who slept in the same cabin as the first mentioned was also taken ill about the 26th and died on September 27th. Both cases were plague and the infection was traced to a bundle of clothes which had remained unopened until the end of the voyage. In connection with this, it will be interesting to note some laboratory experiments as to the vitality of the plague bacillus, as such experiments tend to bear out what has been observed as to the lessened danger of infection when in the presence of light and air. The German Plague Commission, who went to Bombay, report that "outside of the body of man or of the bodies of certain animals the plague bacillus shows a notable tendency to perish." Pure cultivations of the plague bacillus from different sources and of different ages in fluid or on solid media were found to be quite dead after fifteen minutes' continuous exposure to a heat of 70° C. When the heat was 80° C. five minutes were enough for sterilization. A cultivation suspended in water, when examined immediately after exposure to 100° C., was found to contain no living bacilli. Material containing plague bacilli was placed in different ways upon linen, wool silk stuff, and also upon threads, gauze, filter paper, pieces of glass, earth etc., kept in different conditions, and tested from time to time as to its infectiousness. The life of the bacilli under these circumstances was at most eight to ten days, and often only two to five days. The infectiousness of bacilli on the dried skin of two mice that had died of plague was extinguished in the one case on the fourth, and in the other on the sixth day. The German Plague Commission also found that corrosive sublimate 1–1000 killed the bacilli at once; carbolic acid 1–1000 in ten minutes. The bacillus is also sensitive to mineral acids, being destroyed in five minutes by pure sulphuric acid diluted to 1–2000. Yet at Poona it has been reported that disinfection and evacuation of houses for ten days only was quite useless, and as the people returned they were attacked with plague within a few days. The weak point of these and similar experiments is that the bacillus is placed and observed under artificial and manufactured conditions, which are not safe for certain guides as to the vitality of infection under natural conditions; of which latter, except as noted previously, we are ignorant. The constant recrudescences of plague in the Himalayan regions of Kumaon and Garhwal point to the infection being kept up in *fomites*. Articles of merchandise and foodstuffs must be noted apart from *fomites*, as there is no case on record where plague has been introduced from one country to another, or from place to place in an infected country by such means; suppositions that such may have been the case have been mooted, but there are no

facts on record to make them reasonable, at all events during modern times.

The third step in this direction concerns the question of infection from animals. I will confine myself to rats, one of the very limited class liable to plague. I cannot disabuse my mind of the conviction that the spread of infection by rats, even from house to house or street to street, has been magnified out of all proportion by an undue concentration of thought on that limited sphere of the subject. The fact is that in ancient and modern times, an outbreak of plague in human beings has been preceded in many instances by a large mortality among rats. How do the rats become infected? No one knows. There are nothing but theories to be found; for instance, when plague existed at Hardwar, on the Ganges, in 1897, unusual mortality among rats took place at Kankhal, about a mile distant. It is not suggested that infected rats walked that mile from Hardwar, but that the ones resident at Kankhal got infected by food (grain, etc.) taken to Kankhal. Now, what happened; the disease in the rats ended (or the rats all came to an end), and disinfection was carried out where rats had died, and sugar, grain, etc., exposed to the sun for eight hours. This was in the middle of June, 1897 and the last case at Hardwar was reported on the 8th of June. No cases were reported then at Kankhal, and all seems to have gone well until September, communication meantime taking place between Bombay and Kankhal. In the first week in September cases of acute illness with rapid death were occurring, but plague was not declared until the 16th, and then became epidemic. I think this case requires no other explanation than human transmission. I can find no instances of infection being carried any distance by rats, and although it is supposed that rats which have died of plague may be carried in grain, it is, on the other hand, stated that the power to infect very soon becomes destroyed in dead bodies. To quote two authorities in support of my opinion, Dr. Bitter and Dr. Rogers, of the Egyptian Plague Commission, hold the view that rats are of very minor importance in spreading the disease.

Treatment.—The part of the subject of most absorbing interest to the practical physician is the treatment of the disease, or, rather, the treatment of the patient suffering from the disease, as individual cases will present in this, as in all other diseases, symptoms indicating remedies having no obvious relation at first sight to the nomenclature of the complaint. Patients, not diseases, call for treatment. At the same time, certain classes of remedies are adapted to the majority of patients suffering from the more prominent manifestations of the totality of the symptoms, defined by the nomenclature of diseases. I will consider

the experience of plague treatment under three headings and confine myself to drug medication, as consideration of *vis medicatrix naturæ*, (which is too obviously a minus quantity in this disease) and dieting with general hygienic measures, etc., carry us no way at all. (1,) Treatment by what I will call ordinary traditional medicine; (2,) Treatment by serum as practised by Dr. Yersin; (3,) Treatment, introduced by myself, by snake venoms.

(1,) The records under this heading display a collection of compound prescriptions with from three to six drugs given systematically, with various prescriptions for individual symptoms; in short, a routine method of symptom treatment, based on, well, I suppose, orthodoxy! I will take some hospital records in order, and call them *A*, etc.

A reports: "As regards the effect of medicine, it cannot be stated with satisfaction that we possess any standard remedies of certainty. What might seemingly cure one patient is ineffective in another of the same type (because the patients want treating, not the disease—H.E.D..), and it is questionable whether the successes shown are not wholly due to scientific nursing and hygienic surroundings of a superior nature." The following was the drug treatment in this hospital, under which one patient recovered, but it is reported that several others similarly treated derived no benefit and died. Magn. sulph., ʒvj was given to begin with; then every three hours:—

℞	Sodii salicyl.	grs. v
	Liq. hyd. perchlor....	ʒss
	Sp. ætheris nit.	ʒss
	Tinct. digit.	♏ v
	Rum	ʒss
	Water	ʒjss

"The object of the above prescription was, first, that the salicylate of soda acted as a diaphoretic and antipyretic; digitalis was inserted both as a cardiac tonic and to counteract any depressing effect which the salicylate might cause. The nitrate was also given to encourage the secretions, and rum for its stimulating qualities. The mercury was added for its alterative and antiseptic qualities, under the idea that some poison would be neutralized."

I quote this in full, not to criticise the author of it, but to let it stand as its own comment on a system of medicine which is no practical improvement on Galen's instructions as to determining whether a disease is hot or cold and then administering a cold or hot drug. We in this nineteenth century, instead of hot and cold diseases, have ideas as to poisons requiring neutralizing, an idea somewhat akin to the doctrines of the ancient Dogmatists,

and we call drugs, instead of hot and cold, alterative, tonic, eliminative, stimulating, etc., classing many drugs with very distinctive actions on the human body, under a theoretical and artificial nomenclature.

Another stock prescription largely given was as follows :—

Liq. strych.	...	...	...	...	℥ iij
Carbolic acid	...	...	...	...	℥ ij
Tinct. iodine	...	...	...	...	℥ iv
Tinct. digitalis	...	...	...	...	℥ v
Aqua	...	...	...	...	...	ʒj

Every three hours.

In addition there was the usual prescription of morphine at bed-time, Dover's powder for diarrhœa, and, in short, the indiscriminate symptom treatment of orthodox medicine. I need not multiply these prescriptions, but will give results of various hospitals.

In the above-mentioned hospital the mortality was 60 per cent. Total number admitted, 374. In B hospital, total admissions, 304; mortality, 64 per cent. In C hospital, 86 admitted; mortality, 72 per cent. In D hospital, admissions, 107; mortality, 68 per cent.

I have only mentioned hospitals that were under European officers. All the private and caste hospitals tell the same doleful tale, although treating a smaller number of cases; the mortality being from 60 per cent. to 90 per cent. These figures include all cases admitted, many of them in a moribund condition, and some dying in twenty-four and forty-eight hours. There is no other reliable way of judging the effects of any treatment; selection of cases or omission of those dying within a certain time are fallacious and misleading; and treatment of an acute febrile disease which fails to alleviate the tendency to death in forty-eight hours must be said to have failed. It will be instructive to quote two more extracts regarding two of the above hospitals, as showing that a theory of the nature of a disease and of the action of remedies does not help us.

"As a special mode of treatment liq. hydrarg. perchlor. was resorted to from a conviction of the value of such a powerful disinfectant in specific disease, and the likelihood of its being useful as an intestinal disinfectant and bactericide. The general result of the hospital treatment may be attributed to this mode of medication (with remedies for prominent symptoms and complications), and gave 69 per cent. of recoveries, excluding cases moribund on admission, and those treated by Yersin and Haffkine . . . but it is only right to state that many cases treated early and vigorously with this drug died, after perhaps temporary benefit and prolonged life."

"In one remarkable case which died six days after admission from double bronchopneumonia, and under full doses of mercury, the German Plague Commission found plague bacilli on three different days in the blood cultures, but the day before death and at the post-mortem not a single plague bacillus could be demonstrated in the blood or any of the organs. Their conviction was that the patient died from the severe complication, and had his vitality been greater and no complication supervened, he would certainly not have died of plague, all the bacilli being destroyed." No doubt comments on this will suggest themselves, especially to those of a humorous turn of mind; personally I will only say it reminds me of the story of the Frenchman who tried the experiment of keeping his horse alive without food, and was succeeding nicely when the animal died. The other and last note on this subject which I shall give says that "as no specific has hitherto been discovered for the plague, the treatment resolves itself into the carrying out of the general principles of medicine as applied to the treatment of symptoms arising in the course of the disease. The stimulant method and the administration of liq. hyd. perchlor. have both been given the fullest trial, and both have proved equally inefficacious in either controlling or checking the disease."

(2) Dr. Yersin has been chiefly associated with the antitoxin serum treatment of plague, and as there are fuller records of the use of his serum than that of any others of a similar kind, I shall only deal with his, other serums having also the same dismal tale to tell. The antitoxic preparation was obtained from the horse, the animal being inoculated with plague virus, until lethal doses were inoperative. The blood serum then injected into another animal "effectively hinders the reproduction of the bacilli and the formation of toxins." Before going further I must say that in this attempt at treating plague there was a step in the direction toward which all scientific and beneficial therapeutics is now treading—*the single remedy*. I will give the hospital experiences of the treatment, and Dr. Yersin's own tabulated statement.

The report of *A* hospital says: "Professor Yersin visited the hospital on two separate occasions and declined to use his curative lymph. The many patients present, were, in his opinion, unsuitable to his purpose or otherwise far advanced in the disease."

In *B* hospital, 23 cases of plague were treated; but there is no mention as to their being selected, which vitiates results. Of these 13 died and 10 recovered, giving a mortality of 56 per cent. "Delirium seemed to be lessened by the serum. No improvement in the general condition of the patients could be seen and the inflamed glands were certainly not favorably affected. In one case, serum having the guarantee of Dr. Roux and Dr. Yersin

was used in a case not of severe type, and according to Dr. Yersin, a suitable one for curative serum treatment. "Fresh buboes appeared, the primary ones became larger, more inflamed with increased surrounding œdema, and the little patient died. This child, aged four years, was injected forty-two hours from the initial sign, with a full dose of 40 c.c." In *C* hospital four cases were treated, the cases being selected and one being a doubtful case of plague. The other three died, and it was reported that the injection caused intense local discomfort, and "when two of the patients were conscious they dreaded a repetition of the process." In *D* hospital four cases were treated and two died.

When Dr. Yersin first went to Bombay he treated cases in all parts of the city, and his results could not be compared by others, and he was asked to confine his treatment to the hospitals; the result of which is shown above. A statement he himself submitted to the Plague Committee gives:

21 cases treated first day of illness, mortality 12 per cent.
17 cases treated second day of illness, mortality 35 per cent.
12 cases treated third day of illness, mortality 50 per cent.
3 cases treated fourth day of illness, mortality 66 per cent.
1 case treated fifth day of illness, mortality 34 per cent,
Total of 54 cases, 34 per cent. mortality.

Before closing this part of the subject I cannot refrain from emphatically protesting against a system which has been in vogue when experiments with these serums have been made; and that is, having control cases. I think such an idea discreditable to any member of our profession who proposes it. If any treatment offers any ground of hope of being successful, every patient should be given the chance of his life, and treating one case while leaving an alternate one, to watch if he will recover or die, is perilously near trying to improve medicine by murder. This may seem strong language: I intend it to be. If the Almighty has left us so helplessly in the dark as to treating the pains of the highest of His creation with the means He has given to our hands in the shape of medicinal plants, etc., rather than have recourse to such an unjustifiable system of playing with human life, let us renounce the practice of the profession until light be shed. Happily, such need not be, nor are we without a guide to treatment; but I must be content here to enter a protest against such counter-control experiments.

(3) The past history of the treatment of plague shows the use of every class of drug in the pharmacopœia—tonics, cardiac and nervine stimulants, antiseptics, anodynes, antipyretics, diaphoretics, eliminative, *et id genus omne*; members of one class administered with members of another class, and the result has been beneficially *nil*. The profession displays a wonderful consensus of opinion as to this. I venture to include my own treatment in

considering this subject, because, like others, I have also my convictions, and my conviction about this is that the method of treatment I started in India offers a better hope of success than anything of which we have present experience. I was influenced largely in volunteering for plague duty, when officers of my service were called for, by the conviction that means existed for reducing the awful death-rate. The limits of this article preclude my entering into full details, but I may say that I applied the principle which guides us in treating any disease, a principle which is now daily becoming wider spread, with consequent benefit to humanity. There is an acute disease, killing often with fulminating rapidity and clearly requiring a rapidly acting remedy; a septicemic disease, with early marked manifestations in the central nervous system. What remedies are indicated? It is becoming daily, as I said, more and more apparent that a remedy for any disease is one which acts on the same tissues as are affected by the disease. Trying to differentiate drug action *ab usu in morbis* has been tried for centuries, and has failed. Such action must be elicited by experiments on the healthy human body. The poisons which act on the same tissues as the plague poison, and, moreover, with startling rapidity, are the snake venoms. The success which had attended the treatment of yellow fever in America by the rattlesnake poison gave me a good precedent for my hope of similar success in plague. My opportunities in Bombay in 1897 were very limited, as the hospital in my district was put under a native hakim with whom I had orders not to interfere; it being hoped that letting the natives have their own medical attendants would induce them voluntarily to go to hospital.

However, without treading on the susceptibilities of hakim or patients I managed to treat many of the latter, and the former took a great interest in the subject. The hospital was opened April 20, 1897, and I ceased connection with it about the middle of July. Fifty cases were treated of whom twenty-two died. The Government report says, "It is impossible, owing to the singular character of hakim's medicines, to give any account of the general treatment adopted. But the ratio of mortality is satisfactorily low, being 44 per cent., or nearly 9 per cent. below the mean rate of all hospitals." I used almost entirely here the lachesis trigonocephalus administered by the mouth in the cases in which I used snake venoms. I must here make a further statement about this hospital, records of which are published to the end of 1897. Up to that time 158 cases were admitted, with the singularly low mortality of 31 per cent. I have reason to believe the treatment by snake venom was continued after I left, but whether or no, I must give hakim, Din Mahomed Bhagin, credit for such a record.

II.—My next opportunity occurred in the Bangalore epidemic of 1898-99. I personally treated between November 20, 1898, and February 15, 1899, 568 cases, with a mortality of 50 per cent. At first I had no previous experience to guide me, and had many bitter disappointments, due, I decided later, to my using much too small doses. I used cobra and lachesis chiefly, and occasionally crotalus, with six deaths—latterly I stuck to the cobra, as easily procurable in this country, and I gave it hypodermically instead of by the mouth. The crude poison of the other snakes could not be obtained in this country, so I had no opportunity of trying larger doses than I already possessed. I treated the last nineteen consecutive cases chiefly with cobra venom from 1/500-1/1000 (solution of the poison in glycerine), in some cases using lachesis or crotalus, with six deaths—one case being plague pneumonia. I am acquainted with no such result in unselected cases with any other serum. The treatment may be considered as a serum therapy, the snake venoms being toxalbumins. Although a record in detail is beyond my limits here, I send you the notes. In future I should confine myself to the cobra, and use the rattlesnake in hemorrhagic cases, an instance of which I have never seen.

Case I.—Andaloo (female), age 9. Admitted December 24, 1898. Ill three days with fever, severe rigors, and pain and swelling in right axilla. On admission, temperature 101·2°F.; pulse, 116; respiration, 46. Drowsy; unable to sit up or stand. Tongue coated and red at tip and margins. For the next few days her temperature ranged from 99° to 104° F., pulse 100 to 132. The pain in bubo was very severe. On December 29th she had great difficulty in moving her head; buboes had appeared on both sides of the neck, which increased in size; difficulty in swallowing came on; the swelling increased in the axilla and was spreading down the right arm, with great tenderness of the arm. Up to this time she had been taking naja tripudians (cobra) internally.

On evening of 30th there was difficulty of breathing and swallowing, and I blistered the skin over the swelling on right side of neck (her head was fixed towards the left shoulder), and applied tincture of crotalus (1-1000) to the surface, and gave apis m. v every hour. The next morning the pain was much less, although there was no difference in the size of the swelling. Breathing was easier, and the child had not quite such a distressed look. The swelling of right arm had spread to the elbow and was very tender. Apis was continued every two hours. On December 31st, temperature rose to 104.2° F.; but the next day January 1, 1899, she looked brighter than she had hitherto been and there was no danger as regards interference with breathing

or swallowing. The cellulitis of the arm rapidly subsided. On January 3rd, it was noted that the swelling was most marked over left angle of jaw. The further progress does not bear on any particular point. The right cervical bubo suppurated, and she was discharged February 14th, quite well.

This treatment seems to offer a great chance of success, and though all cases of plague do not call for it, I feel sure the cure of the fulminating cases will be found in this direction. I may mention that in many cases hyoscyamus has done wonders, and a case in this series will illustrate its action. Let me again emphasize the principle underlying the treatment, namely, a drug having a scientific connection with the patient's condition and then the single drug, alternated, if you like, with another singly administered drug: then and then only can one find out what does good and what does not.

Prevention.—I now come to the most difficult part of the subject, the prevention of the spread of plague. I shall confine myself to the means which have been adopted in India, with the results accruing therefrom. Nothing will be gained by inquiring into the preventive measures in the early centuries and the middle ages, as the results are obvious. During the epidemic mentioned as having existed in Cutch, 1812-1821, endeavours were made to stay the spread of the disease in the Ahmedabad district by preventing communication between infected and non-infected villages, and relations from a non-infected village were not even allowed to attend the funerals of those dying in an infected locality. Orders were issued that any inhabitants of a village who had visited an infected one was to be removed. The measures, however, did not stop the spread of the disease.

During the Pali outbreak, 1836-1838, endeavours were made to stop infection spreading by quarantine, and lines of cordon were established between infected and non-infected areas. The means adopted were ineffectual. When it is remembered how extremely difficult it is to make such a quarantine absolute anywhere, it is not to be wondered at that the system should have been unproductive of good results in a country where the inhabitants were at every device for breaking it. As to the merits of such a system even if perfect, I will quote the opinion of Dr. Ranken, who investigated that epidemic: "The suspension of the internal trade of conterminous districts, depriving the farmer of a market for his produce, the merchant of the use of his capital, and consequently the labourer of his employment, diminishes or takes away that supply, in the continuance of which the improvident and penniless mass of the people depend to-day for subsistence to-morrow. Nothing in short, appears to be more calculated than an efficient cordon to assist famine, disease, and with the concomitance of an

impure atmosphere, the very infectious or contagious fever which it is intended to eradicate; the combined coercion, restraint and oppression subversive of the functions of society, which the system of quarantine involves, are inferior only to the horrors of plague when it actually prevails."

Again, Dr. Irvine, also engaged in the same epidemic, says: "From what I have myself observed of the plague, it appears that in a small place where only a few cases occur it is very easy to be eradicated; but let the malady once take a firm hold in a large, populous town to arrest the progress of the scourge will be found in India an impossibility."

To come now to later times and it will help to an appreciation of the difficulties to be met, to bear in mind the desiderata in combating the spread of any infectious disease, (*a*) early detection of cases; (*b*) discovery of the source of infection and cutting it off; (*c*) isolation of the sick, and destruction by fire or disinfection of articles which may prove sources of future infection. The series of epidemics which have prevailed over India started in Bombay in 1896: the source of the infection and the time of its appearence being unknown. So two of the important conditions, early detection of cases and dealing with the source of infection, necessary for combating such a disease as plague, could not be fulfilled. When plague was declared in Bombay, on September 23, 1896, it was already prevalent over the city. I will endeavour to state concisely the preventive measures adopted and the results.

1. Efforts were made in the direction of general cleansing of insanitary spots, flushing gullies, lime-washing houses, and disinfecting premises where plague occurred. Result, plague continued to spread.

2. Proclamation was issued that cases of plague were to be segregated, and premises disinfected, if necessary, by force. Result exodus from the city, riots, and more plague.

3. Eight days later another proclamation was issued modifying the former one, and no organized attempt was made to segregate the plague cases. Result, plague continued to spread.

4. After the epidemic had passed its fastigium and was on the decline, a Plague Committee was formed, composed of a general, water-works engineer, member of Indian Civil Service, and medical officer in charge of an obstetric hospital, which proceeded to deal with the subject at the point of the bayonet. Houses were compulsorily searched, cases were removed to hospitals, and premises evacuated and disinfected. Result, plague continued to decline.

I held an appointment under this Committee and I can say that Bombay had never had such a cleansing before. The effect on the plague was not obvious; the compulsory measures were instituted when the epidemic was already on the decline, but at

all events they promised well for cleansing the town of infection. The health officer of Bombay reports concerning the institution of the Committee that "it was a period of panic and irritation. The measures were followed by concealment of cases and concealment led to the intensification of the type. The conditions existed which it would have been necessary to create had it been desired to intensify the disease."

The promises as to the measures destroying the infection were not fulfilled; far from it. The disease began to display activity again in September, 1897, after a lull from July. Search from house to house was again instituted, but as the protecting presence of troops was withdrawn, very serious riots ensued. The system of attempting to get cases reported through Vigilance Committees, composed of influential members of the native communities, was then started and failed. The end of it all was that the disease went unchecked and Bombay suffered from a more severe and virulent epidemic and a larger mortality than obtained in the first outbreak. The history was repeated yet a third time, and plague continues in Bombay. I think the lesson to be learned from the experience of Bombay is, what not to do.

The next outbreak with which I was personally concerned was at Bangalore, in 1898-1899. As Bangalore was connected by rail with infected areas in the Bombay Presidency, efforts were made early to prevent the entrance of infection. Inspection of all railway passengers was instituted, with power of detaining all persons coming from infected areas, and removal of plague cases to hospital, and of persons who had been in contact with such, to a segregation camp. The disease came nearer to Bangalore and infected it; and it was reported: "If any lesson is to be learned from the results of these measures it is that plague cannot be kept out of a place by railways still less by road inspection." The disease broke out in two different localities almost simultaneously. One occurred on August 12, 1898, in the person of a man who had arrived the previous day from Hubli, a badly infected area. On August 13th plague was found in a family near the railway sheds at the station. Supposing that the first related case was a direct importation from Hubli, which is reasonable, there is nothing to show when or how the disease was introduced which affected the second family noted. This family consisted of coolies employed at the railway sheds, but whether the infection was brought by human being, or fomites, or other means is unknown. The disease at first spread slowly, but by the middle of September was extending rapidly, reached its height in October and November, and in March, 1899, the epidemic ceased.

I will briefly summarize the measures adopted. At first an attempt was made to deal with the disease as had been done in

Bombay, *i.e.*, by force; only, forcible house-to-house searching was not carried out. But before the people had experienced any severity, they determined not to have any plague measure at all; an exodus set in; passive obstruction of every kind was practiced, and on one occasion active opposition raised. Every device was adopted for concealing cases; corpses were thrown out on the roads, removed into other quarters than those in which they had died, disposed of in wells and tanks, or secretly buried. The people would respond to no inducement to declare cases, and the better class of natives offered no help; chiefly, if not entirely, in the former case from dread of removal to hospital and segregation camp. Men were then placed in charge of districts to get information of cases in any way they could, and it was penal to dispose of a corpse without a medical certificate from a medical practitioner or a Government medical officer. At first native hakims were allowed to grant certificates, but as only nine cases out of some hundreds certified by these men were said to be plague, and such unique causes of death as from "perjury" and "the grace of God" were declared, the permission to certify was withdrawn. Disinfection was carried out, patients found suffering from plague sent to hospital, and those who had been in contact with them to segregation camp. The number of people segregated was out of all proportion to the plague cases, and segregation was an obvious failure. The same thing has obtained all through the history of the disease in India. The difficulty of dealing with the outbreak was increased enormously by desertion and strikes among menial establishment; attendants for the hospitals had to be imported from elsewhere, coolies could not be got for disinfection work, of removing corpses, which had to be left in houses for considerable periods. The organization was in working order when the epidemic began to decline, and any inferences drawn then as to the effect of improved measures hastening the downward course, I think, are practically valueless. As regards any result from the earlier measures, it was not in the direction of abating the disease, but from the concealment of cases, removal of sufferers from one place to another, indiscriminate distribution of corpses, all owing to dread of segregation, actually contributed to the spread of plague.

The third place in which I have had experience personally of plague is here in Calcutta. Here, again, we are defeated at the outset, the method and time of the introduction of plague being unknown. When I took up the appointment of Medical Charge of the plague Department, there was no doubt as to the existence of the disease in Calcutta; this was in July, 1899. The early history of the subject, however, is very uncertain. There was a great professional disagreement among the medical men as to the diagnosis of cases; some said they had found the characteristic

bacilli in the blood and declaring the patients to be suffering from plague, others equally emphatically denying that the cases were plague. In October, 1896, the Health Officer at the time said he had seen cases of plague which were declared by others not to be so. The former said that the drastic measures adopted by him stamped out the commencing epidemic. It will not be profitable to continue this part of the subject. The first cases about which there was any agreement occurred in March and April, 1898, and by the end of the latter month the disease began to spread. On April 30th plague was declared in Calcutta, and the pronouncement was anticipated by the populace, and a panic set in from fear of prospective plague measures, including inoculation, resulting in an unprecedented exodus from the city, it being estimated that from one-fourth to one-third of the population left. The orders for dealing with the epidemic which were promulgated at the declaration of plague, on April 30th, were the Bombay Rules, house-to-house visitation, segregation of sick and those who had been exposed to infection, etc., but the orders were modified in that they provided for private hospitals and segregation camps for the better classes. Inoculation was recommended but no suspicion of enforcement was to be allowed. Then followed a period of protest on the part of the populace in the shape of strikes and disturbances; during which a mob burnt an ambulance in the street, murdered an Austrian, who was an object of suspicion as an inoculator, owing to his carrying a hand-bag, and attacked an English medical man on plague duty, who shot two men in self-defence. During this time the general health of the town was remarkably good, and there was a prevalent public opinion, shared by the native practitioners, that there was no plague at all. This idea is still prevalent and fostered by certain sections of the press and by medical men. The total number of plague cases reported up to the end of July, 1898, was 190; so it will be noticed that the disease had not spread to anything like an alarming extent; and the area in which it was prevalent was comparatively limited and the most crowded part of the town. However, as no compulsory measures were practically put in force to detect cases, it is an uncertainty as to how many cases of plague actually occurred and, had they been enforced, we have seen that they would certainly have failed to attain such an object. The only measures adopted was disinfection of rooms where cases were found to have occurred. Calcutta was declared free on October 10th, 1898; the total number of cases reported from August 1st to October 10th, 1898, being 40. After October 10th cases of a more or less suspicious nature continued to be found; and in January, 1899, they increased with no doubt as to the fact of their being plague, and on February 24th, 1899, Calcutta was again declared infected.

I remarked just now that during the first outbreak compulsory measures, except as regards disinfection, were practically observed in the breach; and on February 24th, when plague was again declared, what I consider to be the first step in advance was officially taken in dealing with the epidemic in a large city. It was recognized that stringent measures were desirable, but experience in other parts had proved the desirability of modification, and improvements. The resolution issued by the Lieutenant-Governor of Bengal, Sir John Woodburn, ordered that no one should be compulsorily removed either to hospitals or segregation camps. In this way it was hoped that co-operation of the populace would be secured in bringing cases to light. This hope has not been fulfilled; and, with very rare exceptions, the only means of judging the extent of plague is by the system adopted here for the first time, of closely investigating the causes of deaths, from relations and friends. If the case be decided as one of either plague or suspicions of plague, disinfection of the premises where the death occurred is carried out; articles destroyed are compensated for, and other articles are disinfected by steam. The only form of compulsion is that this disinfection must be performed; and no material difficulty has been experienced on this point. The people practically afford no help in reporting cases before or after death, even under these mild regulations; indeed, they make investigations into cases very difficult in various ways, which suggest themselves to their ingenuity; but, at all events, we have no disturbances, no strikes, no indiscriminate disposal of corpses; and, what is notable, no alarming prevalence of plague. This remarkable immunity of Calcutta, which, as regards insanitary areas, is enough to please the most fastidious of sanitarians, will be referred to again; but I will say here that I attribute it a good deal to the non-enforcement of compulsory measures except disinfection. There are rare instances in which a second case has occurred in a room after disinfection, and as evacuation of premises is not enforced, the inhabitants reoccupy rooms perhaps as soon as they are dry, if not before.

History as regards plague in Calcutta, has not been consistently repeating itself. The exact extent to which the disease prevailed in 1898 is unknown, and no good will be gained by quoting figures. The fact which stands out clearly is that although plague obtained a footing, for some reason or reasons, the epidemic has kept within very moderate limits as regards incidence of cases, and this in spite of the fact that the infection has existed over the whole area of Calcutta. I have given one reason to which I attribute this, rightly or wrongly, and now mention other points having a possible bearing on the unique course of the disease in India, here. The population is approximately that of Bombay. The density of population in Bombay

in the most crowded areas is from 503 to 670 persons per acre; in Calcutta, from 107 to 276. Cases have been more persistent in the areas here, showing the greatest density of population, 161 and 226 people to the acre. Bombay City is chiefly composed of streets upon streets of many storied buildings, with as many as 1000 to 3000 people under one roof. Calcutta, although in the large bazar consisting of high buildings, is also largely composed of bustees, collections of mud and wattle huts, with no second story. Plague has persisted in such bustees where the population has been thick, but I consider that the safety of Calcutta has been contributed to by this construction of the city, each inhabitant having a comparatively large breathing area. The idea has been suggested that the local conditions are not suited for the development of the poison. I suggest that some of the consideration so lavishly expended on bacteriological suppositions should be devoted to the social and sanitary improvements of the population. We know nothing and can observe nothing as to the likes and dislikes of the bacillus, except through the medium of the human being. There is enough dirt in Calcutta to satisfy any ordinary requirements of any bacillus, but the virulence of its nature is combated by some condition or conditions applying to the human population; and if less attention were paid to the bacillus and the necessary conditions for vitality, and more attention to the human being and his conditions making for immunity or otherwise, we should make more advance. In short, hitherto we have had hold of the end of the stick in the mud with the bacillus thereon; the *man* holding the other end has received scant attention. The condition affecting the man, which I consider to have contributed to the marked immunity of Calcutta is a small population per acre. Whether there are other conditions affecting personal habits, food, or any other circumstances concerning personal hygiene, is a question waiting solution.

I may conveniently here introduce examples of the possibility of stopping an outbreak in a limited population. They occurred in the Bangalore epidemic. A village inhabited by dhobies (washermen) became infected, and was a source of danger to the Royal Artillery lines close by. A camp was built on an open plain and the people to the number of 543 removed to it. Cases had been occurring daily, and three cases occurred the day after the evacuation. The village was thoroughly disinfected and the people went back fourteen days later. No more cases occurred. Another village in a low-lying and unhealthy situation became infected; and cases persistently occurred. A camp was built on some ground near, and the people, 1700, removed. Three cases occurred within the five days following evacuation, and there were no more. Such instances show the opinion as to the plague

poison having a great predilection for localities to have good foundation, and are further exemplifications of its comparatively low contagious powers, once overcrowding is stopped, and the people get fresh air and light.

It is a matter of observation that some people have a natural immunity from infectious diseases, but, depending as it must on individual idiosyncrasies in a great measure and to a degree which we do not understand, the property does not help us in the face of a rising mortality in a large city. It is also a matter of observation that there is an acquired immunity in the case of vaccination and small pox. This became known to us through an observed fact of nature, and not as the outcome of any theory. The principle on which nature works in that process is still a mystery; but we have the fact remaining. Efforts have been made to impart an individual immunity against plague by M. Haffkine, and although I personally think the subject very much *sub judice*, I will give the strongest evidence in its favour of which I am aware. I must first say that any figures dealing with preventive inoculations on Europeans are valueless in my mind; because Europeans in this country have been naturally immune. The few who have been attacked were particularly liable; only what might have been expected from the state of their health.

Preventive Inoculation.—M. Haffkine's fluid consists of plague virus cultivated in broth, the bacilli killed by heat, the broth and the dead bacilli being injected. The preventive results were carefully observed under favourable circumstances for investigation at an outbreak in Damaon, near Bombay, in 1897. The period of observation extended from March 26th to the end of May; 2197 persons were inoculated and it was estimated that 6033 remained uninoculated. Among the latter there were 1482 deaths, a mortality of 24 per cent.; in the former there were 36 deaths, a mortality of 16 per cent.

In cases where inoculation has been practised, it has been done mostly when the epidemic was declining, and to take one instance, that of Poona, it is reported that no cases occurred in the hospitals among those inoculated; but that the inoculation took place during the decline of the epidemic, and in persons who were not living in highly infected localities, nor belonging to the classes that had chiefly suffered from plague. There is no definite idea as to the length of time immunity is conferred, and to induce a large population to try the experiment in this country is impossible. Any idea or suggestion of inoculation is enough to create panic or riots. Personally, I think the subject in too tentative a stage at present to justify authorities even strongly recommending it; and would in preference advocate an extension of the means we know to confer an immunity, *viz.*, light, air, food, and plenty of them.

In conclusion I will briefly review the lessons to be learned from Indian experience of plague and the difficulties to be contended with. The lesson which stands out in large letters is that the compulsory measures attempted have failed to have the desired repressive effect on the disease, because the populace have, to a man, been dead against them and the authorities. Governments of various provinces, instead of having the people with them, have had to combat opposition of all sorts, as well as devise means of fighting the disease; and the plague *plus* the inhabitants have won the day all along the line. Any measures to be really effective must carry the people with the Government. I may say at once that such measures have yet to be devised. The utmost consideration which is shown to the people here in Calcutta has failed to enlist them on the side of the Government in the direction of detecting cases of plague or inducing them to report sickness of any kind. I think this may partly be accounted for by distrust as to what stringencies may be imposed on them, should the epidemic attain more formidable proportions. On the other hand, there is the initial dislike to being interfered with in any way; and it must be remembered that Occidentals, as well as Orientals, dislike their sick being removed to hospitals and their homes disturbed. The main line of objection to plague measures has always been a dread of segregation, with separation of members of families; and Government orders that no wife would be separated from her husband, or a mother from her children have not succeeded in inspiring confidence. The people display an absolute apathy and indifference to plague, as a rule, but let the Government suggest means by which they may be spared the affliction and a panic ensues. Cases of illness are concealed with every ingenuity, and each one vies with his neighbour in giving false information. Violation of caste is made an excuse for objection to any preventive measures, such excuse having no foundation. Facilities have been given for the institution of private and caste hospitals, but no advantage has been taken of them. Ignorance, distrust, and prejudice have held their sway, supported by superstition. Stories have been current that the British Raj is on the wane and that the Queen wants so many hundreds of heads to appease the adverse fates. The better class of the native communities have been unresponsive to calls for assistance in allaying fears and too often have been the cause of fostering agitation both of an overt and covert kind. It is said in one Government report, "exuberant offers of moral and material assistance were received, but with the increase of the disease further co-operation was withheld and it is a noticeable feature of the outbreak that Government officers were at no time afforded real and effective unremunerated assistance by any of the inhabi-

tants. The tendency was rather to take advantage of the difficulties that arose for the purpose of private advantages and enrichment." Stories are set about that people are killed in the hospitals. The medical practitioners afford little or no help in reporting cases for fear of losing practice, and, moreover, falsely certify as to the cause of death, perhaps, we will charitably suppose, from ignorance. There is no registration of deaths in India, a fractional part of population only being sure of any sort of medical man; consequently any cause of death which suits the fancy of a relative is entered at the burning ghat or burial ground. These difficulties need not be multiplied. The whole question is a medico-political one, in which medicine has to be subservient to policy. Medicine says, detect and deal promptly and decisively with the first cases; policy yet awaits a solution as how to do that. Until that be solved I have no doubt that the policy obtaining in Calcutta at present is the best yet promulgated; get the population against Government as little as possible, provide a hospital for sick if they want to utilize it, if not, leave them alone, carry out disinfecting measures with a minimum of irritation, employing European medical men to supervise everything. One last word, as a guide for the future. Devote some of the labour and attention bestowed on the microbe with such unproductive results to the human being, who is the chief object concerned. Erection of light, airy habitations to replace filthy hovels, and total abolition of dirty, overcrowded areas will do more to stamp out plague than all the bayonets of the British Army. This takes time, time, moreover, counted not by months or years, but by generations. If the money spent on plague operations in India since 1896 had been expended even to half the amount, on improvements in Bombay city before the disease appeared, what a different tale there might have been to relate!

EDITOR'S NOTES.

The Art of Diagnosis.

The best reason for cultivating the art of diagnosis is that it is at the root of all success in the practice of medicine. For good practitioners this reason will supersede all others, but there is another one that may be more efficient as a stimulus to some—viz., the fact that in regard to a large section of the cases of infectious disease there is a chance of errors of diagnosis being detected and even published. This fact is illustrated in every edition of the annual report of the Metropolitan Asylums Board Hospitals. In the last number of the report for the year 1899 a list of such errors is given. The principal of these have regard to scarlet fever, diphtheria, and enteric fever. In the case of scarlet fever the errors were 3·9 per cent.; of diphtheria, 7·4; of enteric fever, 17·3. Some error is almost unavoidable, but it should be reduced to a minimum. It is gratifying to know that in regard to all these the percentage of error is considerably less than in the previous year, which we may take as a sign that more care is taken by practitioners and that the provisions for instruction which the cases in the hospitals of the Board afford are appreciated by students. The improvement in the diagnosis of enteric fever is very marked. The great safeguard against error in this disease is not to be in too great a hurry in coming to a diagnosis. A variety of symptoms must be taken into account before other diseases can be excluded.—*Lancet*, September 8, 1900.

Asthma and the Puerperium.

Dr. Audebert said that common asthma like hay-asthma sometimes appeared during pregnancy. It might also manifest itself only during gestation, and become a true sign of pregnancy. Halliday Croom had published three cases and Chambrelent two others. Adding to these five two cases observed by himself, he had, from a study of the course of this complication, been led to the following conclusions: the disease redoubles in intensity during pregnancy. At the time of confinement the attacks are especially violent and dangerous. The prognosis is serious for the mother (one death in seven cases), and especially for the child (two deaths), which shows manifest signs of sufferings during the paroxysms. Contrary to what might be supposed, the difficulty of breathing, even when very intense, does not produce contractions of the uterus, although the suffocation should cause an excess of carbonic acid in the blood. As regards the etiology of such attacks of asthma during pregnancy we are reduced to hypotheses. Is it the embarrassment of the lungs by pushing up the diaphragm that must be, or is it irritation of the pneumogastric? Or else have we to do with a kind of menorrhæmia, that is to say, poisoning of the blood in women in whom the periods have been suspended as the result of conception? Whatever may be the pathogeny of the affection, the treatment which Audebert has found most efficacious is the use of morphine and quinine. From an obstetrical point of view it is important as soon as possible to withdraw the child from the influence of the maternal crises by premature delivery, induced at a fitting time and speedily terminated.—*Brit. Med. Journ.*, Sept. 15, 1900.

A Rare Monstrosity.

In the September number of the *Maryland Medical Journal* Dr. H. G. Beck of Baltimore gives a description, with two illustrations, of a fœtus which was born on Feb. 3rd, 1900, at the end of the seventh month of the mother's third pregnancy. Her first labour (May 13th, 1898) was strictly normal and at full term; the child is still living and every feature is perfect. The second was a miscarriage in the 4th month, the fœtus showing no signs of malformation. There was positively no evidence of maternal impression during the third pregnancy. The child was still-born; the presentation was not ascertained on account of hydramnios and sudden spontaneous delivery. The specimen, which has been placed in the museum of the College of Physicians and Surgeons in Baltimore, presented all the combined features of harelip, cleft palate, acrania, hydrencephalocele, and spina bifida. It was a female, it weighed 219 grammes (seven and three-quarter ounces), and measured 26 centimetres (10¾ inches) in length and 24 centimetres (9½ inches) in circumference of the body. The most striking condition was the absence of the cranial portion of the frontal and parietal bones. The eyes formed the uppermost part of the head and stood out prominently. The nose was broad and distinctly flattened. The neck, it might be said, was entirely absent, the head being attached directly to the body. The hydrocephalic brain and the cord and their membranes were exposed and unprotected by osseous structure. The brain had two distinct hemispheres separated by the longitudinal fissure, and its general contour and outlines very nearly approached the normal. The foramen magnum was entirely absent. The vertebral arches were deficient from above downwards as far as the lower dorsal region. The rest of the body and the extremities were apparently normally developed.—*Lancet*, Sept. 29, 1900.

Acute Poisoning by Trional.

Dr. Warren Coleman of New York records in the *Medical News* of July 28th, 1900, a rare and interesting case of acute poisoning by trional. The symptoms of poisoning by this drug have been said to consist of vertigo, loss of equilibration, ataxia, nausea and vomiting, diarrhœa, stertorous breathing and cyanosis, tinnitus aurium, hallucinations, and hæmatoporphyrinuria. The case recorded by Dr. Coleman is that of a woman, aged 35 years, who was suffering from a mild delirium brought on by an excessive indulgence in champagne and alcoholic drinks for several days. Six trional powders (of 15 grains each) were ordered to be taken, one every half hour for two hours. The patient became drowsy and sleepy and on the third day it was found difficult to rouse her. There were no disturbances of respiration or circulation to be detected by ordinary clinical examination. In answer to questions she replied that she was "dizzy and sleepy." Her speech was thick and she walked with difficulty, the gait being ataxic. She showed no sensory disturbances and the urine was free from hæmatoporphyrin. Upon inquiry it appeared that she had taken trional far in excess of the prescription and to the extent

of nine drachms (540 grains) in 72 hours, the original prescription having been repeatedly made up at the stores. The patient was ordered a saline purge and she gradually recovered from her state of trional intoxication. The above case shows that trional is free from excessive depressing effects even when taken in maximal medicinal doses, and that even when by accident enormous doses are taken the result need not be necessarily fatal. The development of hæmatoporphyrinuria should always be looked upon as a danger-signal in cases of administration of trional or sulphonal, and the use of the drug should be discontinued until this symptom has passed away. Attention may be here recalled to a case of the sulphonal habit ending fatally which was recently recorded in these columns.—*Lancet* September 8, 1900.

The Cerebral Symptoms of Poisoning by Gas.

On Friday, Sept. 14th, four persons living in the suburb of Tottenham, in North London, were poisoned by gas that had escaped in a bedroom, with the result that two of the cases ended fatally and the other two sufferers only recovered after being taken to the hospital and medically treated. In a recent number of the *Neurologisches Centralblatt* (No. 13, 1900), Weygandt has published an account of his experiences of poisoning with the products of combustion of gas in an unventilated room. He heated the air in a bathroom by using a gas-stove, and then proceeded to heat the bath water by the same method. He allowed the air of the room to get vitiated to such an extent that a candle would not burn in it. He then stripped off his clothes and entered the bath. As he entered the room he states that he felt a pulsation in the temples, ringing in the ears and dizziness, and a feeling of anguish and distress. He was soon compelled to leave the bath, though he had no clear recollection of this, and went to his bedroom, where he became unconscious. On regaining consciousness he found himself lying on the floor. He now suffered from vertigo and intense headache, and had a general feeling of apathy and utter indifference to things around. He imagined at the time that he had had an epileptic attack. He rose up and went into another room and again became unconscious. On coming to he found that he had vomited, and was now feeling extremely weak and hearing a roaring sound in the head. He sent for a medical colleague, and when the latter arrived he (Weygandt) stated that he thought he was suffering from gastric irritation and poisoning due to some preserves he had eaten. Shortly afterwards, however, his recollection grew clearer and he was able to state the real cause—viz., poisoning by the products of combustion of gas in the bathroom. In cases of poisoning by ordinary illuminating gas the symptoms appear to be somewhat similar—viz., giddiness, præcordial distress, and shortness of breath (dyspnœa) soon passing into unconsciousness. The intense headache and the vertigo experienced after recovery or resuscitation are also characteristic of both kinds of poisoning. In Weygandt's case it was interesting to note the condition of amnesia for the events preceding each attack of unconsciousness, and for the gastric irritation and

vomiting which preceded recovery. The practical lesson to be learnt is the necessity of having a full ventilation in sleeping-rooms and in bathrooms, and especially in the latter when gas-stoves or geysers are used to warm the air of the room or the water of the bath itself.—*Lancet*, Sept. 22, 1900.

Curare in Tetanus.

Dr. B. Scharlau states that curare had never met with general favour in the treatment of tetanus, Billroth in his great work on Surgical Pathology and Therapeutics (1871) remarking that it had been used occasionally but had not fulfilled expectations. The following record, however, of two cases of tetanus and trismus treated by curare with recovery in both is interesting. The first case was as follows. A boy, aged 11 years, was admitted to hospital on August 29th with marked trismus and tetanus lasting two days and following upon a wound in the foot inflicted by a splinter of wood four weeks previously. Two weeks after the wound there was pain in the right shoulder, soon after the entire trunk became rigid, and on the following day the neck and arms became involved. Attacks of trismus and tetanus followed later. There was very marked opisthotonus, the abdomen was rigid and tense, micturition was difficult, the temperature oscillating about 100°F. Treatment commenced with a hypodermic injection of one-twelfth of a grain of curare repeated in increasing doses as often as the physiological symptoms of a dose faded away. When a dose of one quarter of a grain was reached the opisthotonus disappeared and the patient was able to open the mouth sufficiently to separate the teeth and drink. To secure sleep at night chloral hydrate was given in the evening. The injections of one quarter of a grain of curare were repeated at first every six or eight hours, but after six days of such treatment the effect became more lasting and only two injections were required in the 24 hours. From Sept. 12th one injection daily was given until Sept. 20th, when it was discontinued. He was after this given a warm bath of 30 minutes' duration every morning. He improved, and on Oct. 5th he was discharged as cured. The second case was that of a boy, aged seven years, with tetanus and trismus, admitted to hospital on Oct. 31st. There was extreme opisthotonus, the superficial and deep reflexes were exaggerated, the temperature was 101·4°, the pulse was 132, and the respirations were 42. The pure alkaloid curarin was given, the dose being one-fiftieth of a grain hypodermically. About 30 minutes after the injection the mouth was somewhat opened and the arms became lax, but the legs remained as rigid as before. Five grains of chloral hydrate were given nightly. The injections of curarin were continued on the same principle as in the previous case. The patient continued to improve day by day. On Nov. 5th he slept six hours during the night, the muscles being quite relaxed. The next day he sat up in bed for the first time. Eventually the stiffness of the jaws and legs entirely passed away and he was discharged cured. In a third case, where the patient was a man, aged 25 years, the same good resulted from treatment by curare. It appeared that with every day the

patients lived the prognosis became better, the tetanus poison gradually losing its strength. If no natural sleep set in a hypnotic (chloral hydrate) was given at night. Nourishment (liquid) was administered and if the sixth day of the outbreak had passed a hopeful prognosis could be entertained.—*Lancet* September 8, 1900.

The use of Sterilised Milk.

Questions are from time to time raised as to how far the use of sterilised milk for the feeding of infants may be desirable in the interests of the public health, and there are those who allege that sundry infantile diseases are accentuated by the exhibition of milk thus prepared. Although some of the considerations upon which objections to this sterilisation of milk are based are somewhat theoretical in nature it is important that all experiments in this direction shall be closely watched. The subject is one of no little importance to the public health, and more especially at a time like the present, when there is considerable difficulty—at any rate without the use of preservatives of one or another description—in supplying fresh milk. Under these cricumstances the progress of the Infant Milk Depôt at St. Helens is not without interest. The health committee of that borough has taken seriously to heart the raid which death makes yearly in its infantile population, and it determined to study by means of a sub-committee the work which is being done in England and in France in the direction of "sterilised humanised milk." In London it was found that considerable progress was being made and that a large portion of the public were quite willing to pay the small extra charge which is being made for such milk. At Fécamp in Normandy it is claimed that the infantile mortality has been reduced from 243 to 140 per 1000 births by the use of this milk which is sterilised and humanised under medical supervision. The bottles, which are arranged in sets of nine are, after being sterilised, placed upon numbered shelves, the numbers corresponding to the number of the child for whom the bottles are intended. The parent calls for the bottles and replaces on the shelf the empty nine bottles which were taken the previous day. The nine bottles represent nine feeds per day in such quantities as the age of the babe necessitates, the children being brought weekly for inspection and weighing. At Havre there is a similar society at work. The movement is essentially philanthropic in character but the municipal authorities have been so impressed with its work that they are about to subscribe to the funds of the society. The St. Helens sub-committee were evidently edified by the results attained and they consequently recommended the town council to inaugurate a similar system in St. Helens. In August, 1899, a depôt was opened much on the Fécamp lines and by the end of the month 80 children were being daily fed from it. In consequence of the praiseworthy and public-spirited efforts of the council in this sense there has, Dr. Drew Harris, the medical officer of health, reports, been a great reduction in the infantile mortality of the borough. A large number of children already suffering from diarrhœa were brought to the depôt during August and September, a remarkable im-

provement having in many cases resulted. Dr. Harris speaks hopefully of the venture and all those working for the reduction of infantile mortality will watch the progress of the scheme with much interest.—*Lancet*, August 4, 1900.

Gangrene from the Application of Dilute Solutions of Carbolic Acid.

The *American Journal of the Medical Sciences* for July contains a very complete and important paper on this subject by Dr. F. B. Harrington. In the United States carbolic acid has become a general household remedy for the treatment of slight wounds and bruises and it is used as a moist dressing. The application of dilute carbolic acid for hours to the extremities may produce gangrene—a fact which is not generally known. Dr. Harrington has seen during the last five years at the Massachusetts General Hospital, either in his own practice or in that of other surgeons, no less than 18 cases of gangrene arising from the use of carbolic acid. From medical literature he has collected a large number of other cases which with his own make 132. The recorded cases appear to be entirely American and continental. The absence of British cases is no doubt due to the fact that a dilute solution of carbolic acid applied in the form of a moist dressing is not a household remedy in this country. However, the possibility of carbolic acid being used in this manner is by no means remote, so that the warning given by these cases is not useless. Dr. Harrington relates the following case. A delicate woman, aged 26 years, cut the tip of her right index finger. Her brother, a strong man, had two weeks before successfully treated a cut on his finger with a solution of carbolic acid. She therefore put on a bandage saturated with the same solution. This was at 6 P.M. On going to bed she moistened the dressing again with the solution. There was some pain in the finger during the night. In the morning when the dressing was removed the skin was grey and the finger was swollen and felt "lifeless and heavy." The colour changed in a few hours to a dark brown and later, when the finger became dry, to black. The patient was first seen at the end of four weeks. The finger was in different places clay-coloured, dark brown, and black. A line of demarcation had formed near the end of the first phalanx. The remainder of the phalanx was red and swollen. Amputation was performed through the middle. Thrombosis of the vessels, superficial necrosis of the finger, and deeper purulent infiltration and hæmorrhage were found. The history of all the cases is similar. After an injury a finger or a toe is wrapped in a dressing saturated with carbolic solution. If the solution is strong enough and the time of application is sufficiently long the part will be lost. Numerous cases have been reported in which amputation had to be performed for gangrene following the use of 2 per cent. and 3 per cent. carbolic solutions. In a child, aged 10 years, the second and third phalanges of a finger were lost after the application of a 1 per cent. solution for 24 hours. Usually the time of application was from 12 to 24 hours. By a series of experiments Lévai has shown that the gangrene is due to a direct chemical action of the carbolic acid on the tissues and that other dilute chemicals have a similar effect. Five per cent. solutions of muriatic, nitric,

sulphuric, and acetic acids, and of caustic potash, produced gangrene when applied to an extremity for from 20 to 24 hours. On the trunk superficial gangrene occurs if the application is sufficiently prolonged. The result is not so injurious as on the extremities because of the greater thickness of the tissues and because the blood supply cannot be shut off in the same manner as in an extremity.—*Lancet*, August 4, 1900.

CLINICAL RECORD.

Foreign.

LOBELIA AS A LOCAL REMEDY IN STRICTURE.

By G. W. Boskowitz, M.D., New York City.

I want to report an experience I had with this old-fashioned drug a few years ago, since which time I have used it constantly for the treatment in both spasmodic and permanent strictures.

Spasmodic stricture it will cure as if by magic, and in permanent stricture where you have found it impossible to pass the smallest kind of a sound you will find after its application the sound will easily pass. I can best illustrate by reporting to you the first case upon which I used it.

Mr. G——, about 40 years of age, had had gonorrhœa twice, the last time about three years ago. This had left him with a slight chronic gleet. For about one year he had had difficulty in urinating the stream being small and twisted, passing slowly and without pain. The difficulty in this respect had been growing worse every day until the time he called upon me his urine simply dribbled drop at a time. It would take him half an hour to empty his bladder, and there was considerable pain. He had consulted several physicians, and they had attempted to pass sounds without success, and these attempts no doubt accounted for the irritation and the pain which the patient was experiencing while urinating. Learning that those who had attempted to pass the sounds previously had used the cold sound, I warmed mine, anointed it well and made the attempt to pass it but, without success. For two weeks I had the patient call every other day and made the attempt each time to pass the sound. I could not even pass a filiform. The patient was getting discouraged. I cheered him as best I could, telling him as I had several times before that I had no doubt that at the next attempt we would be successful and we were. At his next call before attempting to pass the sound I dropped into the urethra about 15 drops of Lobelia, closing the meatus and held the Lobelia in the urethra for five minutes. It produced a smarting sensation which passed away in a short time. I now prepared my sounds and was delighted to find that I could pass a No. 10 with little difficulty. I continued this treatment twice a week without producing any urethritis, gradually increasing the size of the sounds untill I could with ease pass a 24. The patient can now pass his urine normally, has no gleety discharge and I have not passed the sound for two years. I see him frequently and know he has had no return of the difficulty. Since treating Mr. G—— with the Lobelia I have tried it on quite a number of cases with success in all of them.—*Homœopathic Recorder*, August 15, 1900.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA, DYSENTERY, AND CHOLERA.

157. MANGANUM.

Constipation :

1. No st. first day. 2. Rare, dry, difficult st.
3. Constipation for 48 hrs.
4. Constipation for 24 hrs., followed by yellow, gritty st., with tenesmus and constriction of the anus.

Diarrhœa :

1. Very pale yellow, scanty st., preceded by pinching in abd.
2. Two soft sts., each one preceded by pinching in abd.
3. Loose and tough st., preceded and accompanied by pinching in abd. and the side which only goes off by compressing the abd. with the hands, and disappears with the evacuation of the st. ; at the same time rigor.

Before st. :

1. Pinching in abd. ; also in the side.
2. Rigor. 3. Stitches in abd.

During St. :

1. Pinching in abd. and side.
2. Tenesmus, cutting and constriction of the anus.

After St. :

1. Relief of pinching and cutting in abd. and the side.

Rectum and Anus :

1. In the rectum, painful tearing, after dinner.
2. Constrictive pain in the anus, when sitting.
3. Much rumbling in the rectum as far as the anus.
4. Cutting in the rectum, with the usual st., in the morning after rising, preceded by gripings in abd.

General Symptoms :

1. Great restlessness of body and mind, as if something was tormenting him. Ill humor ; moroseness.
2. Low-spirited, most joyful music does not cheer him, but saddest music refreshes him.
3. Weak memory. Absent minded.
4. Great short-sightedness. Burning of the eyes and diminution of vision by day. General diminution of the senses.
5. Face cachectic, pale and sunken ; as after dissipation.
6. Most violent toothache.
7. Smell from the mouth, of an earthy or clayey kind, in the morning after rising, not perceived by himself.
8. Dryness of the palate and lips.
9. Gathering of saliva in the mouth.
10. Oily taste in the mouth. Insipidity with bitterness in the mouth immediately after eating and drinking ; so long as the food is in the mouth it tastes right. Bitter taste in the morning after walking, with dry lips, without thirst. Every thing tasted bitter in the morning, but the taste in the mouth was all right. Sour taste in the mouth after eating.

Sour taste posteriorly on the tongue in the morning after awaking ; it ceases after eating.

11. Neither hunger nor appetite, a sensation of repletion and satiety, he loathed the food, though he relished it and it diminished the repletion and satiety.
12. Total adipsia. Thirst for beer or sour milk, with dryness in the throat.
13. Frequent eructations, with yawning and great ill humor.
14. Sour burning, like heartburn, with inclination to vomit, rising from stom. to mouth. In the stom. a sensation of heat, as from prolonged hunger, rising up the œsophagus into the head. Burning and sensation of soreness, from pit of stom. up under sternum into palate, with great restlessness. Pressure, as from a stone, on right side of stom. Passive constrictive pain in stom., in morning after rising, in every position of body. Pressure in pit of stom. during eating, ceasing on laying hands on it. Below last ribs, pressive sore pain, aggravated by touch and movement.
15. The whole abd. pains as if ulcerated, with pressure in hypochondria. Contraction, nausea and warmth, mounting up the œsophagus, from the middle of abd. to chest. Drawing pressive pain in abd. during eating ; it ceases after eating. Cutting in umbilical region, on taking a deep breath. Flatulent colic, in the morning in bed, after awaking ; the odorless flatus discharged gives no relief. Inflation and tension in abd., somewhat relieved by discharge of flatus, but frequently recurring. Warmth in lower abd., as from warm drinks ; flatus moves to and fro, and rises to stomach.
16. Frequent urging to urinate, with scanty afterwards with copious discharge of urine. Urging to urinate at once, when merely eating one apple. Frequent discharge of golden yellow from the very beginning of proving. Urine becomes turbid, and deposits an earthy sediment.
17. Burning twitching at times, extending from the seminal vesicles into the glans. Itching in the interior of the scrotum, not alleviated by a pinching or massaging of its skin.
18. Catamenia at unusual time ; too early by six days, scanty and lasting only two days. Leucorrhœa.
19. Palpitation. Pulse irregular, scarcely perceptible, sometimes quick, sometimes slow.
20. Frequent yawning, though she had slept enough. Sound sleep, with anxious dreams of danger to life. Restless sleep, with anxious dreams, and weakness on waking. Dreams immediately on falling asleep. Vivid dream of something that really happened next day. Vivid, anxious dreams, as if everything took place as when awake ; every detail was remembered ; on waking he felt strong. About 3 A.M., thought he was awake, and with his physician ; as in most

complete consciousness; could remember every word of the conversation.

21. Itching here and there, disappearing on scratching. Biting itching over whole body, only after becoming heated and perspiring.
22. Great weariness at 8 P.M.; he could scarcely keep awake. Generally very weak and weary at 4 P.M. Great inclination to stretch all day. The head, hands and feet feel swollen and larger than usual, at 4 P.M., after walking in the open air.
23. Cold hands and feet, even in the house, though without chilliness. Frequent rising of heat into the head, with thirst. Night-sweat over whole body that compels scratching, on waking. Night sweat on legs, especially on feet, on throat, on waking.
24. Most of the symptoms occur in the night. Most of the symptoms become worse from stooping. The symptoms which have come on in the room, improve in the open air. Many of the symptoms come on in the open air, and improve in the room.—*Jahr.*

Remarks: MANGANUM was proved by Hahnemann, as Dr. Hughes says, "in his earlier manner," that is, on healthy subjects and in appreciable doses. Hence the symptoms, excepting those from Nenning, may be considered as reliable. But the metal was proved both as white Carbonate and soluble Acetate, and Hahnemann has left no clue to distinguish between the symptoms of the two, in the belief no doubt that either may be used indifferently. As we have often previously remarked this belief of Hahnemann cannot be justified on theoretical or practical grounds. There is, however, no means of remedying the defect, and we must use the one or the other just as we like. We should prefer the Carbonate.

The drug has not yet been used in our school for diseases of the bowels, excepting for colic and pains in the abdomen. According to Hahnemann, cases, in which clotted and difficult stool, or repeated pappy stool during the day, were among the predominant symptoms, were benefitted by MANGANUM. As indicated by the symptoms it may be used both in constipation and in diarrhœa: in constipation when the stools are rare, dry and difficult with tenesmus and constriction of the anus; in diarrhœa when the stools are *scanty*, pale yellow, soft, or loose and tough, preceded and accompanied by rigor, and by pinching in abdomen and the side which is relieved by pressure and by evacuation of the stool. It is likely to be specially useful in dissipated subjects.

Gleanings from Contemporary Literature.

SOME INCIDENTS IN THE EVOLUTION OF THE MODERN PHYSICIAN.

President's Address delivered at the Sixty-Eighth Annual Meeting of the British Medical Association.

By William Alfred Elliston, M.D.,
Senior Surgeon, East Suffolk and Ipswich Hospital.

(*Concluded from* Vol. xix, No. 9, p. 396.)

Disappearance of the Barber Surgeons.

It is not surpising, therefore, that in 1745 the Barber Surgeons were dissolved, and were incorporated as distinct societies, 18 George II, c. 15. To us it is inconceivable it could have lasted so long.

The barber's shop was a favourite resort for idle persons, and, in addition to its attraction as a focus of news, a lute, viol, or some such musical instrument, was usually kept for the entertainment of waiting customers. The barber's sign consisted of a striped pole, from which was suspended a basin symbolic the use of which is still preserved. The filter round the pole indicated the ribbon for bandaging the arm in bleeding, and the basin the vessel to receive the blood.

In 1753 Pott, who had been Surgeon to Bartholomew's for four years, and John Hunter, were elected by the Court of Assistants the first Master of, or Lecturers in Anatomy. Pott was then 39 years of age and John Hunter 25.

The surgeons of the eighteenth century, like the physicians, were accustomed to give advice at taverns. Sir William Blizard, who was President of the Corporation of Surgeons in 1787, was one of the last survivors of this line of practice. For many years he is stated to have attended regularly at Batson's Coffee House in Cornhill at a certain time in the day to hold consultations.

Of the apothecaries of the eighteenth century there was nothing eventful after the great decision in their favour by the House of Lords. Nevertheless they were active in their requests, and obtained further concessions. In 1722 an Act was obtained empowering the Apothecaries' Company to visit the shops of all apothecaries practising in London, and destroying such drugs as they thought unfit for use. In 1748 additional powers were given to the Company by an Act authorising them to appoint a Board of ten examiners, without whose licence no person should be allowed to dispense drugs in London or within a radius of seven miles.

Eighteenth-Century Apothecaries.

Of the apothecaries of the eighteenth century little has been written. To this, however, there is an exception in Robert Levett, who owes it probably to his having made the acquaintance of the great Samuel Johnson in 1746 that we have a record of him. In 1763 he became an inmate of

Johnson's house. Bosworth called him awkward and uncouth, but Johnson found him useful and companionable. "Levett, Madam," he said to Mrs. Thrale, "is a brutal fellow, but I have a good regard for him, for his brutality is in his manners not in his mind." After making tea for Johnson on the latter's rising about 11 o'clock, Levett usually went round among his patients, and did not return until late at night. His chief failure was insobriety, but this, Johnson observed, was mainly the result of extreme prudence.

The scanty means of education possible in London and the absence of medical societies is remarkable. Until the last quarter of the century there was no means or possibility of obtaining a complete medical education in London. Surgeons and apothecaries were supposed to be able to pick up a sufficient smattering of their work by attending a hospital for a few months and physicians were educated elsewhere. Some half a dozen took a degree at Oxford or Cambridge, and these alone could become Fellows of the Royal College of Physicians; others, a much larger number, went to Edinburgh and the Scotch Universities, Dublin or abroad.

Medical Societies.

The education of Edinburgh was far ahead of London; medical societies and periodicals flourished there before coming south. There were medical societies in Edinburgh as far back as 1720. In London there were societies of 1753 and 1764; they were both small societies, and disappeared after Hunter's death. The only medical society in England, outside London, was the Medical Society of Colchester, founded in 1774. The absence of societies was much felt by earnest practitioners desirous of progress. Dr. Edward Jenner belonged to a medical society which met at the Fleece Inn, Rodburgh. Papers were read on medical subjects, and the members afterwards dined together. At these meetings Jenner read papers on various subjects. He also belonged to another society, which met at the Ship Inn, Alveston.

In London in 1783 there were five lecturers in anatomy, three lecturers on surgery, and three lecturers on the practice of medicine. The great medical schools of London and of the provinces have almost all been established since this period, and indeed most of them in the present century, as well as many of the useful universities now existing in the United Kingdom. Learned societies in medicine from this time became established, and they now exist in all parts of the kingdom.

The eighteenth century closed with an immense advance all round in general science, and particularly in chemistry and electricity. The last two years were distinguishable by remarkable observations in physics upon the nature of heat; when Count Rumford boiled water, and Davy melted ice by friction. The nineteenth century opened with a galaxy of talent devoted to scientific investigation in almost every department, which has resulted in great benefits to all knowledge. At the commencement of the century there was no illumination by gas or electricity, no ignition by lucifer

matches; there was no railway or steamboat communication by land or sea; there was no electrical communication by telegraph or telephone, no electric light, no anæsthetics, no sun pictures, no knowledge of the intimate connection between electricity and chemical change. The century had but just turned when Sir Humphry Davy, then a very young man, gave brilliantly in rapid succession the discovery of nitrous oxide gas, electrolysis, the discovery of the metals potassium and sodium, the safety lamp, and with Wedgwood the possibility of sun pictures. Dalton gave his atomic theory to chemistry, Malus the polarisation of light, Ritter the chemical rays, Sir W. Herschell his dark heat rays, Young his valuable contribution to light, Oersted and Faraday their observations on electric magnetism. The French school, with Cuvier, Lamarck and St. Hilaire, greatly advanced physiological science; while a little later, in the year 1832, Liebig discovered chloral and chloroform, and among his other herculean labours in various directions he added to our knowledge of organic chemistry by tracing the changes which food undergoes in our bodies, and studied which kinds are converted into fats, muscle, blood, or sugar in our system.

NOTABLE PRACTITIONERS.

Of the physicians and surgeons in active practice there were many of great distinction; Lettsom, Matthew Baillie, Edward Jenner, James Gregory the younger, Edward Rigby, Cline, Abernethy, Sir A. Cooper, Sir Charles Bell, and many others of scarcely less eminence. Auscultation was then unknown in this country; Auenbrugger, of Vienna, had in 1761 published his work recognising diseases of the chest by percussion; his ideas were ridiculed until 1808, the year preceding his death, when Corvisart translated it into French, and it rapidly attained a European reputation. Quickly following in 1816 Laennec, a French army doctor, when chief physician to the Necker hospital invented the stethoscope, and published his *Traite de l' Auscultation Mediate.* Edward Rigby, Sheriff of Norwich in 1802, had recently published his work *On Uterine Hæmorrhage*, which made him famous at home and abroad. Bancroft, who left England to settle in Jamaica in 1811, published his *Essays on Yellow Fever;* and of these Murchison says in the *Continued Fevers*, "No work ever effected a greater revolution in professional opinion in this country." The spontaneous or autochthonous origin of pestilential disease was then the generally-accepted one, though the doctrine now prevalent of the continuous reproduction of a virus existing *ab externo* had been stated in the most precise terms by Eggerden, a Prussian physician, as early as 1720.

The ever-growing importance of surgery as a special science is recognised to the full at the present day. The long roll of eminent surgeons of later days commenced with several distinguished pupils of John Hunter. In the early part of the century there were three surgeons then practising who exercised an enormous influence at the time—Abernethy, Astley Cooper, and Charles Bell. Abernethy was four years senior to Cooper, and Charles Bell six years younger. Of them both Abernethy and Cooper had great fame as lecturers and bold and philosophic surgeons. The former was the

founder of the distinguished school of St. Bartholomew's, while the latter was the surgical hero of the Borough United Hospitals until his secession to the school of Guy's Hospital, which thenceforth became a separate and distinct school from that of St. Thomas's.

Charles Bell, to whom we owe anatomical and physiological discoveries of the highest importance in connection with the nervous system, became a Fellow of the Royal College of Surgeons in Edinburgh in 1799. At that time the Fellows were in rotation surgeon to the Royal Infirmary. In this position Bell soon gave evidence of great ability. In 1804 a new arrangement was made regarding the attendance of surgeons at the Royal Infirmary, and Bell, probably as being junior, was excluded from the hospital. He proposed to the managers to pay £100 per annum, and to transfer to them for the use of the students the museum he had collected on condition that he should be allowed to stand by the bodies when dissected in the theatre of the infirmary, and make notes and drawings of the deceased's appearances. This enthusiastic proposal was rejected, and the consequence was that Bell was lost to Edinburgh for many years, and went to London in November, 1804. In June, 1812, he was appointed surgeon to the Middlesex. In 1836 he returned to Edinburgh to the Chair of Surgery in the University.

Medical Legislation.

The important legislation of the nineteenth century was the Apothecaries Act of 1815. This Act has been proved to be one of the greatest boons ever conferred upon the medical profession, and whatever may be the sentimental objection to a learned profession being connected with traders, we are bound to remember that to those who sought the Act of 1815 we are indebted for a reform which has been far-reaching in its results. Previous to this Act the education of the medical practitioners of England and Wales was entirely optional on their part, and although many of them possessed degrees or licences of the Universities or Colleges, the greater number possessed no such qualification, and many of them were wholly illiterate or uneducated. About the year 1850, a preliminary examination in arts was instituted as a necessary and independent requirement before proceeding to the medical curriculum. In 1858 the Medical Act became law, and by this Act the L.S.A. of London was permitted to practise through Scotland or Ireland. The Apothecaries Amended Act passed into law in 1872. Women were admitted to practice in 1876. In 1878 the pharmaceutical chemists were licensed by Act.

It is worthy of observation that the State has hitherto not interfered to prescribe the subject matter, or the minimum standard of medical examination, although there has been at least one attempt by the Government of the day to establish a uniform minimum. Under the beneficent legislation of the century, and particularly by the establishment of the General Medical Council, jealousies between the different branches of the profession have mainly disappeared. It is difficult now to realise that at the commencement of the present century it was far otherwise; then we find a young physician

advanced by his college in 1808 as a reward for a pamphlet against the growing pretensions of army surgeons.

The use of wise legislative enactments in the social influence and status of the profession soon became apparent, but of course, its full effects were not evident until many years had elapsed. It is quite within my memory that the only qualification recorded in many instances in the annual *Medical Directory* was "in practice prior to 1815." It is not a little singular that the Apothecaries Act has gradually extinguished the apothecary as then understood. I can remember an apothecary's shop in this town. That has now become a thing of the past, as will soon, I trust, what is called the open surgery of to-day. With the better education required and the institution of examinations, a different class of students were attracted to medicine, and they were rarely satisfied with the apothecary's licence, but sought further a surgeon's diploma.

Private Medical Schools.

This increased desire for knowledge of anotomy and surgery had a remarkable effect at the time. At the early part of the century, with some few exceptions, very few surgeons, even of large hospitals, had personally dissected the human body ; and the demand then for subjects became so great that a disreputable association had to be entered into between the teachers of anatomy and a class of men who were termed "Resurrectionists," to supply them with subjects. The sums paid to these body-snatchers were frequently exorbitant, and a scandal arose which at the time created a great sensation, as, in addition to the many indecencies undoubtedly committed, it was alleged that murders were incited. The excitement was happily allayed by the passing of the Anatomy Act of 1832, which by affording facilities for the practical study of anatomy, gave a great impetus to study in this country.

One of the curious features at the early part of this century was the continuance of the system of private medical teaching. Some of these schools attained great degree of prosperity. Grainger's School in the Borough was founded by Edward Grainger, a dresser of Sir Astley Cooper at the United Borough Hospitals. Grainger failed to get an appointment when Aston Key was appointed Demonstrator and started a school of his own in Webb Street, near Guy's Hospital. He built a theatre, and by securing the services of the resurrection men assembled a class of 300 students. Edward Grainger died in 1824, but the school continued under his brother, R. D. Grainger, until 1842, when it was closed, St. Thomas's Hospital securing his services as Lecturer on general anatomy and physiology. The Hunterian School of Medicine in Great Windmill Street and the Aldersgate School were other schools of great importance. The latter was closed in 1849.

It was at Grainger's School that the body of the English philosopher, Jeremy Bentham, was dissected and lectured upon, in accordance with his will, by his friend, Dr. Southwood Smith ; after the examination his body was embalmed and dressed in his clothes and is still preserved at University College, London. Southwood Smith, previous to the passing of the

Anatomy Act, had published an article in the *Westminster Review* on the use of the dead to the living, advocating facilities for dissection. At the ceremony Southwood Smith gave a sketch of Bentham's philosophy and an account of his last moments. During the ceremony a violent thunderstorm shook the building, but Smith proceeded with a clear unfailing voice, with a face as white as the dead philosopher's before him. Brougham, Grote and Mill were present at the examination of their dead friend.

The Medical Press.

The growth of the medical press and the influence it had upon the medical profession commenced with the efforts of William Sharman, M.D., who was born at Harwich in 1767. He commenced in 1810 to edit a periodical, which was styled the *New Medical Physical Journal or Annalls of Medicine, Natural History, and Chemistry.* It was in existence in 1815.

In 1815 Thomas Wakley was a student of the Borough Hospitals; the greater part of his medical education was acquired at the Grainger School. In 1817 he became a M.R.C.S., and commenced practice. Fortunately, perhaps, he did not altogether succeed, and his great talents were turned in the direction of journalism. He founded the *Lancet* in 1823, with the primary object of disseminating much-needed information hitherto regarded as the exclusive property of members of the London Hospitals, and also with a view of exposing the family intrigues that influenced the appointments in the London hospitals and the medical corporations. For the first ten years of its existence the *Lancet* provoked a succession of fierce encounters between the editor and the members of the privileged class in medicine. In the first number Wakley made a daring departure in commencing a series of shorthand reports of hospital lectures. On December 10th, 1824, Mr. Abernethy applied to the Court of Chancery for an injunction to restrain the *Lancet* from publishing his lectures. The injunction was refused by Lord Eldon, on the ground that official lectures in a public place for the public good had no copyright vested in them. He then commenced a regular issue of hospital reports of cases and notable operations. The irritation at them was so great that his exclusion was ordered at St. Thomas's Hospital. He also carried on a campaign against the Royal College of Surgeons. Mr. Wakley and his successors have done work which has advanced the general interest of the profession by leaps and bounds, and during the long period of its usefulness it has always availed itself of the best talent, and many of those who have achieved success in other departments have given their early work to the advancement of medical journalism. At the present time the influence of the press is enormous. Our own Journal, reflecting the opinions of this Association, shares with the *Lancet* and many other medical periodicals in guiding the profession upon every question to the direct issues constantly occurring.

Physicians and Surgeons of the Century.

It is of course impossible to give anything more than quite a brief enumeration of the brilliant work of the physicians and surgeons of this century, but there are some incidents that deserve notice—take, for instance

the remarkable advance in practical medicine by the physicians of Guy's Hospital. Richard Bright's discoveries in the pathology of kidney disease, which results were published to the world in 1872 ; Hodgkin, pathologist of the hospital, who published his observations on some morbid appearance of the lymphatic glands and of the spleen ; and Thomas Addison, who from 1849 to 1855 was directing attention to the relationship between anæmia and disease of the suprarenal capsules. These diseases are now known all over the world as Bright's disease, Hodgkin's disease, and Addison's disease. In 1873 another Guy's physician, Sir William Gull, described to the Clinical Society of London a cretinoid state supervening in adult life in women.

In 1837 Gerhard, a young American physician, clearly laid down the difference of the two diseases of typhus and typhoid fever. After much doubt and discussion the question was finally settled in England by Sir W. Jenner in 1849-50.

The credit of recognising the connection between the acceleration and violent actions of the heart and the enlargement of the thyroid gland, two of the great cardinal symptoms of exophthalmic goitre, undoubtedly belongs to the great Dublin physician Graves, who in 1835 pointed out in a published lecture that the disturbances of the heart's action is not necessarily associated with organic disease of the heart. Five years later a German physician, Basedow, published a more complete and elaborate account of the clinical features.

Hughes Bennett first described leucocythæmia in 1845. A few weeks afterwards Virchow published a case which had been independently observed by him previous to the publication of Bennett's first communication on the subject, and pointed out that the white corpuscles found in the blood were not pure cells ; he termed the disease leukæmia. A violent controversy sprang up between those two celebrated men and other supporters. Of this Byrom Bramwell says "that while Bennett was the first to observe and publish a detailed case of the pathological appearances and blood changes, Virchow was the first to give an intelligent explanation of the peculiar alteration of the blood which is the essential characteristic of the disease."

Among other great contributions to the advance of scientific medicine, one can but enumerate the works of Marshall Hall, Elliotson, Stokes, Alison, Sir Thomas Watson, the Farrs, Sir W. Jenner, Sir J. Simpson, Tyler Smith, the Budds, and Sir James Paget. In connection with the name of Dr. Elliotson, who aroused such a famous controversy in relation to his association with mesmerism, it is interesting to note that he was the first in 1826 to discard the style of dress then prevalent with physicians—namely, knee-breeches and silk stockings. He was also one of the earliest in England to adopt the practice of auscultation.

Specialisation in Surgery.

In surgery, more perhaps than in medicine, the tendency has been to specialise. Some of them inevitable and most desirable, other quite un-

necessary. Dentistry is now practised as a special branch of surgery. The earnest work of Sanders, Sir W. Lawrance, and later of Sir W. Bowman, Critchett, and many others, has established ophthalmic practices in this country. In aural surgery, George Pilcher, Toynbee, Yearsley, Harvey, Hinton, and many still living have raised aural surgery from a neglected condition to a recognised position as a legitimate branch of surgery.

In all the domains of surgery there has been no more brilliant advance than in abdominal surgery. Operations that scarcely more than forty years ago were deemed unjustifiable—so great was the mortality at that time—are now performed with success in every hospital. For this our thanks are due to Sir Spencer Wells, Keith, Clay, Greig Smith, and many of those still living, but to none more than he to whom all surgery is indebted for antiseptic precautions in treatment.

It is not, perhaps, so generally known as it deserves to be, that William Jeaffreson, of Framlingham, in the county of Suffolk, an East Anglian surgeon, was the first surgeon in England to perform the modern operation of ovariotomy by a small central incision. The circumstance, as recorded in the *Transactions* of the Provincial Medical Association of 1837 are as follows: "Mr. Jeaffreson in 1833 lost a patient suffering from an abdominal tumour. She died from tuberculous disease of the lungs, and obtaining the consent of the friends, he made a *post-mortem* examination, which satisfied him that the tumour could have been removed, and but for the disease of her lungs her life might have been spared."

In November of the same year Jeaffreson and his friend King attended together a lady in her confinement with a small tumour. They subsequently advised an operation, and in May, 1836, a central incision was made, about 1½ inch, the cyst tapped, withdrawn, the pedicle secured by ligature, and the ends cut off short. The wound was adjusted by two sutures, and napkins wrung out in the coldest water were constantly applied to the wound. Sulphate of magnesia was administered every four hours, and all went well until the tenth day, when he was called to his patient at 3 A.M., to find her pulseless, with incessant vomiting and niccough, with griping pains in her body. A stimulating enema, with 2 grs. of opium, gave her speedy relief, and she recovered.

His friend and neighbour King at Saxmundham, Suffolk, about ten miles away, operated a few weeks later, with complete success, his incision being somewhat longer—about 3 inches. Two years subsequently a third East Anglian surgeon, Crisp, of Hearleston, who lived about twenty miles from Jeaffreson, was also successful, with an incision of 2 inches. These three cases, which were performed by three surgeons in general practice in this county, were the first in England, in response to the doctrines of William and John Hunter, and are the more remarkable when we consider that no operation of the kind was attempted in London until four years later, and no ovariotomy was performed in a London hospital until ten years after Jeaffreson's case.

Of another special branch of practice, the treatment of mental affections

has greatly improved, and the provision of suitable institutions has generally extended. Among many others to whom we are indebted are William Tuke, 1732-1822, and other members of the same family; Sir John Bucknill, and many other physicians at home and abroad. A provincial physician, Dr. Robert Gardner Hill, who was Mayor of Lincoln in 1851, deserves to be specially remembered. In 1839 he published lectures on the management of asylums and the treatment of the insane. He argued that in a properly-constituted building, with a sufficient number of suitable attendants, restraint is never necessary, never justifiable, and always injurious to all cases of lunacy whatever.

Of the further practical results in surgery the results are so well known that it goes without saying that the advance has been enormous, thanks to our countrymen Sir B. Brodie, Aston Key, Sir W. Lawrence, Robert Liston, Sir James Paget, Syme, and the Edinburgh surgeons, Sir W. Ferguson, John Hilton, the Dublin surgeons, Sir George Humphry and many still living, as well as by the brilliant achievements of surgery in all parts of the world.

Antiseptics and Anæsthetics.

The two great discoveries of the nineteenth century in connection with both medicine and surgery are the antiseptic treatment (for which we are indebted to the genius of a living surgeon, Lord Lister), and the use of anæsthetics. Those now in general use are nitrous oxide gas, discovered by Sir Humphry Davy in 1800; of sulphuric ether, by Faraday; and chloroform, by Liebig. I shall not detain you by a history of the introduction of anæsthetics into surgical practice, but as we have still living in East Anglia a most distinguished surgeon (Mr. William Cadge), who was present on the occasion of the first operation in London under the influence of ether, I thought it would be interesting to hear his record of the circumstances. Mr. Cadge says: "Robert Liston was the first surgeon in this country to use ether, and those who were present at University College Hospital on December 21st, 1846, and witnessed the complete and perfect success of that first venture, will not easily forget the dramatic character of that scene. I was present and assisted at the operation – amputation of the thigh by the double flap method. Someone present timed the operation; it took 30 seconds; the few arteries were tied, and all signs of blood cleared away. A towel was then thrown over the stump, and we watched anxiously for the patient to show that he was not dead; he presently woke up, and when asked once or twice if he could stand the pain of the operation, he accused us of cruelly trifling with his feelings, and when the towel was removed and he saw the naked stump, he burst into tears, and I thought Liston would do the same."

Many fresh fields of inquiry and separate study have been instituted. In 1831 Alfred Swaine Taylor, the famous chemist and medical jurist, was appointed Lecturer on Medical Jurisprudence at Guy's Hospital. His inaugural course was the first delivered in this county, and was attended by many leading counsel and some judges.

Public Health.

In 1842 Parkes was Assistant Surgeon to the 84th Regiment, when he retired and became physician to University College Hospital. He was the founder and first teacher of military hygiene, and was a great factor in, if not the founder of, the science of modern hygiene.

The elaborate directions in the Mosaic laws for the preservation of health through scrupulous attention to cleanliness and the isolation of the sick and extreme care in the use of wholesome articles of food and drink, are well known to Biblical students.

The subject has in later years been studied to considerable advantage. In 1801 Heberden wrote: "The cause of so great an alteration in the health of the people of England—for it is not confined to the metropolis—I have no hesitation in attributing to the improvements which have gradually taken place, not only in London but in all the great towns, and in the manner of living throughout the kingdom, particularly in respect to cleanliness and ventilation. Two centuries ago the mortality of London is stated to have been 80 per 1,000; at the present day it is under 20. A century ago ships could barely keep the sea for scurvy, whilst gaols and hospitals were in many cases the hotbeds of fatal disease. Now these conditions are rectified, or at least the means of rectifying them are known."

The special departments which concern the surroundings of man—his personal health, food, drink, clothing, hours of labour, and certain other points such as the management of infancy, the prevention of disease, the hygiene of the sick chamber, and the disposal of the dead—have been the subjects of legislation during the present century.

State medicine, as an organised department of administration, is entirely of modern growth. The first Act in this direction was the Towns Improvement Act of 1847; but it was not until the following year, 1848, that a general Public Health Act embracing the whole of England (except the metropolis), was passed.

The Local Government Board was created in 1871, and finally in 1875 the existing laws were digested into the Public Health Act of 1873 (38 and 39 Vict.).

These Acts were the result of the labour and agitations of many sanitary reformers and associations, such as the Health of Towns Association, the British Association for Improving the Dwellings of the Industrial Classes, which built the first model dwellings.

Such are some of the incidents of the past that have helped to make us what we are. I am deeply sensible of the imperfect and fragmentary sketches I have recorded, but they show, I hope, a record of progress in the physician of to-day in education, in social status, and in all that goes to make professional life more pleasant. Questions are constantly arising affecting the interests of the profession, and many at this moment require combined as well as personal action. It is the consideration of these matters, in addition to our scientific work, which justifies the existence of the British Medical Association.

Expenses of Modern Medical Education.

In conclusion, may I briefly refer to the growing expense of medical education? It is certainly the most costly of all the learned professions. This is due to the long period of time required for the medical curriculum, and to the multiplication of qualifications, which I regard as a fashionable absurdity. I am not unmindful of the up-to-date requirements of general culture—of an accurate knowledge of anatomy, chemistry, physiology, biology, bacteriolology, pathology, physics, optics, mechanics, electricity, and photography, which are all essential to the well-educated physician; they are daily called into requistion in order to diagnose and to direct the eye and hand in the treatment of disease. The necessity for the highest educa-

tion for this mental training is obvious, and it rests with the General Medical Council to see that this can be obtained without undue restrictions. What I venture to think is wanted is early qualification, and if the elements of science were more generally taught in school life that would be easily possible. After obtaining a disploma or licence to practise it would be well if the General Medical Council could see their way to institute the requirement of practical experience.

In passing the milestone of life in the year A.D. 1900 I have thought it might be well to take a retrospect of our advance to our present position, and to express the hope that as time goes on our profession may continue to uphold its regard in the estimation and affection of all, and its usefulness may continue unchecked for the advantage of humanity. – *Brit. Med. Journ.*, August 4, 1900.

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HAHNEMANN AT THE CLOSE OF THE NINETEENTH CENTURY; OR THE TRIUMPH OF TRUTH.

I.

AFTER a century of persecution not only during life but long after, a persecution which, though it has lost much of its malignity and violence, has not yet ceased, Hahnemann has had honors done to him, which, if we mistake not, has not been done to any mortal.

"Magna est veritas et prævalebit"—Great is truth and will prevail. This now common phrase is a modification of the original (Edras iv, 41), "Magna est veritas et prævalet" (Great is truth and prevails), where the verb, instead of being in the future, is in the present tense. Both forms of the phrase express very nearly the same idea, namely, the greatness and the power of truth. The original phrase, in our opinion, expresses the idea more directly and more correctly. The power of truth is inherent in its very nature, and is therefore present always, by virtue of which it prevails eternally, triumphs over everything that is a misrepresentation or falsehood. There is no untruth, falsehood, or lie possible in Creation, except in the minds of creatures endowed with free will. That such creatures should sometimes stray from the destiny of their being and should choose falsehood rather than truth, wrong rather than right, evil rather than good, is a mystery, but is a fact in this world however sad. It is a sadder fact that having made the wrong choice they should not only adhere to it, but resist those whom they find on the opposite side.

Charity demands that we should admit that the opposition to truth does not always proceed from inexplicable perversity in adhering to falsehood or untruth as such, but often from a sincere conviction of the truth of what is held as such. It is not always easy to find out truth. And when found it is seldom seen in its full magnitude and in all its bearings or relationships. Hence it often happens that what one looks upon as truth is not so looked upon by another. This becomes the prolific source of the differences between men, all of whom may be lovers of truth and have for their object the discovery of truth. If all men would bear these facts in mind, they would agree to differ, and then their differences, instead of leading to animosity and hostility, would stimulate them the more in the pursuit of truth.

The world is far yet from this millennium of universal brotherhood. And it is matter of no small regret that where this brotherhood is most wanted there it is most wanting. In no affair of life is it so wanting as in religion which concerns man's spiritual welfare, and in medicine which concerns his physical welfare. The reason, we believe, is due to the fact that both have degenerated into trades, instead of remaining as they should have done the highest callings for the exercise of the highest faculties. Interest having taken the place of duty, no wonder that men engaged in either should have turned their eyes from truth as their pole-star to themselves as the centre of their actions.

Constituted as the world is, in this conflict of interest and duty truth would have been irretrievably lost had it not been for the inherent and eternal power of truth to prevail. With finite, fallible men the question of the triumph of truth is necessarily a question of time, but it is a question of time only. The belief in this ultimate triumph seems to be inherent in man, and it is this which arms the devotees of truth with almost superhuman ardor and vigor in its pursuit in spite of the most insuperable difficulties and the most relentless opposition and persecution. The life and career of Hahnemann afford one of the noblest examples in history of heroic martyrdom in the cause of truth, and of decisive and lasting victory over error backed by the solid phalanx of the highest authorities of ages.

"The true monument of Hahnemann," we said, in our article on the Exhumation of his body at the cemetery of Montmarte and of its transfer to Père-Lachaise, in Paris, in 1898, and on the proposals to erect suitable monuments to his memory, "is that which he has himself erected. It is the work which he has accomplished 'for all time and for all mankind'; the discovery of the law of healing by drugs which has established medicine on the basis of nature and not of vain imaginings; a work which will be more enduring than any monument we can erect of brass or marble.

But frail humanity requires something which can appeal to the senses, something which can be seen and touched, something which will bring back and concentrate the past in one moment without any effort of the mind. Hence the desire and hence the necessity for material memorials of the great and the good. In the case of Hahnemann the desire is but a reflex of gratitude of those who have profited by his teaching—physicians and patients alike, and the necessity has arisen from the strange fact of that teaching being still, at the end of a century, ignored and unacknowledged, even when acted upon by the majority of the profession. We hope, therefore, that gratitude will find adequate expression so that the necessity may be met in a way worthy of all parties concerned, worthy of the greatest man of medicine ever born, and worthy of his followers who ought to show that their devotion to truth is genuine."

It is with no small satisfaction and pride we observe that the gratitude of Hahnemann's followers has found adequate expression, and that the sincerity of their appreciation of his discovery of the most beneficent truth yet discovered by the genius of man has been most worthily marked by the erection of two monuments in his honor,—one in the New World, and one in the Old. The one in the new world has been very appropriately erected in Washington, the Capital of the United States of America, and the one in the old world has been as appropriately erected in Paris, the Capital of France, where Hahnemann found a happy resting place in the last days of his life and where his mortal remains are buried. The former at a cost of $ 48,800, the latter at a cost of 20,000 frs. The former was borne entirely by the homœopathic physicians of the United States, the latter by homœopathic physicians throughout the world. We give in the present number an account of the Dedication of the Monument in Washington, compiled from the *North American Journal of Homœopathy* and the *Hahnemannian Monthly*, for July, &c.

Of this monument the *Homœopathic Eye, Ear, & Throat Journal* says: "The dedication of one of the grandest, most sublime, and artistic monuments ever erected to commemorate any one man's beneficent work for his fellow man, by such a comparatively small body as the homœopathic physicians of this country, is an achievement that a very much larger body taking double the time could well have been proud of. That in eight years *physicians* should have contributed $ 50,000, as nearly every dollar came from physicians themselves to create a monument to the man who discovered a therapeutic law, is not only phenomenal in the history of monuments, but the strongest public evidence that could be given of the faith in this law by the followers of Samuel Hahne-

The *North American Journal of Homœopathy* says: "The completion and dedication of the monument serve to mark an epoch in the history of the school. Hahnemann in bronze at Washington may have as powerful an influence for truth and tolerance in medicine as Hahnemann in the flesh did in Paris seventy years ago. The silent figure of the great philosopher and reformer in medicine teaches a more impressive lesson than books alone can impart. The thousands who will visit the beautiful Scott Circle in the years to come will not only pause to admire the majestic proportions of the statue, but will depart with a juster conception of the genius and power of Hahnemann and an increasing knowledge of the beneficent purposes and mighty force of the homœopathic school.

"The dedicatory exercises on that memorable Thursday, June 21, 1900, were severely classical in their simplicity. The appropriate introduction by Dr. Custis, the dignified presentation of the monument to the Institute by Dr. McClelland, the masterly ode to Hahnemann by Dr. Helmuth, the brilliant and epigrammatic oration by Dr. Walton, and the eloquently forceful speech by Attorney-General Griggs were each and all eminently worthy of the occasion. No false note was sounded, no jarring chord was struck, but there was a frankness, a directness, an earnestness that characterized all the addresses and that took the vast assemblage by storm."

THE DEDICATION OF THE MONUMENT.

The unveiling and presentation of the monument erected under the auspices of the American Institute of Homœopathy, in memory of Samuel Christian Friedrich Hahnemann, at the east side of Scott Circle, Massachusetts avenue and Sixteenth street, northwest, took place Thursday afternoon, June 21, 1900, at 5 o'clock, with elaborate ceremonies in the presence of a vast concourse.

The weather was perfect for an outdoor function, and the arrangements which had been made were faithfully carried out. In every particular this event, which was the culmination of eight years of effort, and which was the main feature of the 1900 meeting of the American Institute of Homœopathy, was a source of satisfaction to all those interested in its direction, as well as to the general public.

The monument stands in the triangle at the east side of the circle, forming an alignment with the statues of Gen. Winfield S. Scott in the center of the circle, and of Daniel Webster in the triangle at the west. Music was furnished by the Marine Band, which was seated on a temporary platform to the north of the monument.

A board flooring covered a portion of the lawn in front of the

monument, and from a slight scaffolding which had been erected to provide shelter from the direct rays of the sun streamed national flags and bunting. Chairs were provided, and there were seated members of the Institute and the general public, the throng extending out over the sidewalks and pavements. About the statue were grouped those who took part in the exercises and the distinguished guests.

Those on the base of the statue, besides President McKinley, were Attorney-General Griggs, Col. Theodore A. Bingham, Superintendent of Public Buildings and Grounds; Commissioner H. B. F. MacFarland, Gen. John M. Wilson, Mr. Cortelyou, the President's private secretary; Dr. C. E. Walton, President of the American Institute of Homœopathy; Dr. J. H. McClelland, Chairman of the Monument Committee; Dr. H. M. Smith, Treasurer of the Monument Committee; Dr. J. B. Gregg Custis, who presided over the meeting; Dr. Nancy T. Williams, Dr. William Tod Helmuth, the poet of the day; Rev. Dr. B. F. Bellinger, Dr. George G. Seelton, Chairman of the Finance Committee, and Dr. Eugene H. Porter, Secretary of the Institute.

Arrival of the President.—As the President alighted from his carriage, the band struck up "Hail to the Chief," and the entire audience cheered heartily as he mounted the steps of the monument to take the seat assigned him. The applause continued even after he had reached his seat, and only subsided when the President had smilingly bowed his acknowledgments. Mr. McKinley appeared to take a keen interest in and to enjoy the exercises, and the clapping of his hands was usually the cue that started the frequent applause. One of the selections by the band was a medley that ended with "Yankee Doodle." The President used his silk hat to beat time upon his knee to the inspiring strains and applauded heartily when the selection was concluded.

Dr. Custis, in calling the assemblage to order, said in part:

"We have gathered together upon an occasion which in some of its aspects is solemn, in some glorious, in all momentous. Solemn, because we have assumed the responsibility of setting as an ideal for those who shall appear upon the world's stage in the twentieth century, a character. The man to whom this monument is erected offers an ideal which, if attained by any in the field of science, in the realm of wisdom, in the art of medicine, or in the school which he represented, would justly entitle them to honorable recognition, and secure for them a similar memorial—a memorial constituting the grandest testimonial ever received by any in the walks of life followed by our confrère, Samuel Hahnemann.

"Glorious, because it represents a completed work, conceived in Washington, nurtured by the American Institute of Homœopathy, and made possible by the liberality of the adherents and

patrons of the school founded by him in whose honor this grand work of art and architecture is erected.

"Momentous, because it places in bold relief the fact that truth, represented simply by a thought, can, in so short a time, in a country whose motto is freedom, reach its highest development and certainly that has been reached when it can count among its adherents a sufficient number of grateful and admiring followers to erect in honor of him who gave this thought expression such a monument as this, as a proof of their admiration of the faith possessed, the singleness of purpose shown and the success achieved.

"This monument is erected in the hope that from it, as a center, truth may be spread which will result in the lessening of suffering and the increased usefulness of mankind."

An invocation was offered by Rev. B. F. Bellinger, D.D., of this city, after which Dr. J. H. McClelland, of Pittsburg, the chairman of the monument committee, formally, on the part of the committee, in a brief but eloquent address, presented the monument to the Institute. In making the presentation Dr. McClelland said, among other things:

"Eight years ago at a meeting of the American Institute of Homœopathy in this city this committee was charged with the extra professional duty of erecting a monument which should be a suitable memorial to the man whom we wish to honor, and be commensurate with the dignity of the body we have the honor to represent. Your committee, after many failures, finally secured a design which it feels sure will meet the approval of our parent body and all those who love the beautiful in art as well as that which represents a great and noble idea. We are indebted for this beautiful sculpture to an American, Mr. Charles Henry Nieuhaus, and for the exquisite architectural effects to Mr. Julius F. Harder, of New York.

"Mr. President, I take pleasure in transferring to your keeping, for the time, this monument erected to the honor and glory of Samuel Hahnemann."

The Unveiling.—The statue of Hahnemann was then unveiled, while the strains of "America" were played by the band.

Dr. Helmuth's Ode.—After the monument had been formally presented to the Institute, an original and very eloquent ode to Hahnemann was read by Dr. William Tod Helmuth, of New York, in which the achievements of the founder of the homœopathic school of medicine were treated at length.

After the reading of the Ode there was the following eloquent

ADDRESS OF DR. C. E. WALTON, PRESIDENT, A.I.H.

"For many years the American Institute of Homœopathy, the oldest national medical society in America, and representing the homœopathic school of medicine, has been striving through its

Monument Committee to secure the erection, in a suitable location, of a fit testimonial to the worth of our illustrious founder. The result of their gigantic efforts is before us. It has been a work of love, and most nobly have they performed it. Nor time nor labour has been spared; and, behold, 'the end crowns the work'!

"In accepting this work of art the Institute would joyously acknowledge its debt of gratitude to this faithful committee, and to its efficient co-workers, the Finance Committee.

"Their labours make it possible in this memorable year 1900, which marks on the dial the dividing point of centuries, to rear in our nation's capital this magnificent monument to commemorate at once the genius of Samuel Hahnemann and the loyalty of his followers.

"Upon this pedestal sits the figure of one who loved his fellowman. Could the spirit of the departed animate this lifeless form, illuminate those sightless eyes, and loosen that silent tongue, there would shine forth the benignity of a reawakened love, and we should hear the sound of a new benediction.

"He comes as no usurper to complete this group of memorable men. No false standard should begrudge the philosopher the right to keep his vigil in company with the statesman and the warrior. He stands for liberty of thought no less than the statesman stands for civic liberty; and both look with confidence to the warrior to maintain, if necessary, his perpetuity. Right and Might and Light form an invincible trinity, and it is fitting that their sculptured representatives should fraternise within the limits of a common circle.

"I seem to hear from one end of this beautiful campus the famous words, 'Liberty and Union now and for ever, one and inseparable!' as they thundered forth the deliberate conclusion of the immortal Webster as to the necessary foundation of this great Republic; and from the other end I hear the philosopher's dictum, "*Similia Similibus Curentur*," proclaiming the law of cure for the relief of suffering humanity. In the realms of thought there are no limitations of nationality. The great American and the great German each proclaimed a truth—the one for the welfare, the other for the amelioration, of mankind.

"In all ages men have delighted to commemorate in enduring structure the great deeds and lofty sentiments of distinguished persons. Pyramid and obelisk and sphinx bespeak the power and worth of Egypt's mighty dead. Cathedral, tomb, and statue perpetuate the memory of Europe's illustrious leaders. Temple, shrine, and abbey hallow the memory of the world's devoutest ecclesiastics. Shaft and urn and quadriga remind us of the famous warriors, philosophers, and statesmen of the world's history.

"The human mind forgets. The monument reminds. All history is a reminder, hence a monument of the ages. We need to be reminded. Death, with relentless hand, sweeps into the insatiable grave the transient form of man, and each succeeding generation would have to spell out anew a repetition of life's problems, which had long ago been solved. We need the reminders left us as a rich heritage to the race. Reputation is not progress. And forgetfulness is the grave of advancement. The mainspring of intellectual activity is the memory and comprehension of what has already been achieved, and all development depends upon a former evolution.

"We stand before a statue of Michael Angelo, and our emotions are stirred to harmonise with those of the great sculptor. In this way we honour the doer by recognising the things done.

"Music, poetry, art, science, philosophy, learning—all stimulate slow growth; and the highest good is that which promotes the surest success, the most permanent welfare, and the greatest service. We listen to a symphony, and our souls are taught to vibrate with the very being of the composer. A great poem stirs our inmost self with the lofty imagination of the poet. A marvellous painting compels our admiration of the beautiful.

"Around the name of Washington clusters the sentiment of Liberty.

"Around the name of Lincoln clings the idea of Emancipation.

"Around the name of Luther hovers the thought of Reformation.

"Around the name of Hahnemann gathers Liberty of Thought, Emancipation from Doubt, and Reformation in Medical Practice.

"In building a monument to Hahnemann we honour not only him but ourselves. We seek not to deify the man, but to pay tribute to his greatness as a scholar and a philosopher. We seek to bear testimony in a substantial manner to our belief in the value of his Law of Cure. He taught the difference between a law and a coincidence, between a knowledge and a guess. He brought to a high degree of perfection the power of the thinking habit, and his attainments stand as a constant incentive to the highest mental activity. We would honour not only the doer but the doing, and hope to perpetuate his example as an appeal to all investigators.

"In subscribing to a system of philosophy and inculcating its precepts we show our esteem for the philosopher and establish a tribute more enduring than monumental brass. But symbols seem to be one of mankind's established needs. Wherever a cross is raised there stands a monument to the crucified Christ. His worshippers, thus reminded of His death, look beyond the mere emblem, strengthen their faith in its teachings, and consecrate themselves anew to the adoration of His precepts. To adore a

man or his image is idolatry; to worship that for which it stands is religion.

"In applying the doctrine of symbolism to Samuel Hahnemann by rearing a monument to his name we do but recognise the universal need. He stands for a superior medical truth. We seek to stimulate the recognition of that truth. The elements of a martyr were in his personality. We strive to incite a reverence for those elements. A father in medicine, we acknowledge his paternity. A wise counsellor in practice, we acknowledge his counsellings. A past master in the proving of remedies, we subscribe our faith in his provings. A law-giver in therapeutics, we recognise his law.

"The molten bronze is poured. The granite block is hewn. And here stands the stately structure that shall remind us of what has been. Beneath its deep foundation we would gladly bury all the anathemas, all the obloquy, all the antagonisms that have been hurled against the world's reformers—bury them beyond the hope of a resurrection, and signalise the burial with the proclamation, 'Peace on earth, and good will towards men.'

"We commend that broad spirit of Congress which has furnished this eligible site, and the good judgment of our President who did not withhold his signature from the act which made it possible for us to make our contribution towards embellishing a city already known for its works of art.

"In the city of Hahnemann's fatherland, which once drove him from her doors, now stands a monument to his memory. The city of his adopted country, whose enmity towards the fatherland is not yet extinguished, now shelters his remains within the sacred confines of her most celebrated cemetery. The capital city of the world's greatest Republic now receives to her protecting care this monument to his fame."

Turning to Colonel Theodore A. Bingham, Superintendent of Public Buildings and Grounds, Dr. Walton said:

"We give into your keeping this testimonial of our recognition of one of the world's most pronounced benefactors. Take it under the national protection and guard it as a cherished object of millions of our people." And then concluded with the following fervid peroration:

"We dedicate this monument to the earnest students in America. May they draw inspiration from the light of him who demonstrated that genius will assert itself, and can reach its goal even in the presence of adversity.

"We dedicate it to the profession of which he was so great a leader, that they may learn the value of self-sacrifice and persistent effort.

"We dedicate it to our country that she may be stimulated to

perpetuate the fostering care which shall cherish the development of every truth that makes for the betterment of a nation."

Colonel Bingham spoke very briefly in accepting the monument on behalf of the government. "This monument and statue will be the nineteenth," he said, in part, "to come under the jurisdiction of the government in the District of Columbia, making twenty-three in all within the old boundary-line of the city of Washington. It is with great pleasure that I have the honor as the government's officer in charge of public buildings and grounds in the District of Columbia, to accept this monument on behalf of the government, and I assure you that every care will be taken for its preservation."

Colonel Bingham was followed by Attorney-General Griggs, who concluded the exercises by an eloquent address which created great enthusiasm among his hearers. "There are triumphs to be won in the peaceful pursuits of life," he said, "that bear equal glory to victories on the field of war. In the centre of this park stands a statue of a great warrior, a soldier of his country in three great wars, the representative of his country in martial valor. on the other side is the statue of a great statesman and orator, the expounder and defender of the Constitution, representing constitutional law, liberty and representative government. Here, on this side, with great appropriateness, this Institute has placed this other statue, not of a man of war, not of a great Senator, but of a scientist, a reformer, a good physician. The laurels of fame grace with equal glory the brow of the warrior, the statesman and the scientist. There is but one, and one only, test of worthiness, and that is that man shall have wrought in unselfishness, with a spirit of sacrifice and devotion, in the interest of his country, of humanity and the world, and that merits a fame which these three possess in a triune glory.

"It was the merit of Dr. Hahnemann that he exposed fallacy, that he found the truth, and showed things not as they had been believed to be, but as they are. It was not his chief glory that by his doctrine he founded the homœopathic school, but that he uncovered errors, and disclosed secrets of nature which all the world has recognized as correct without regard to school. He accepted no dogmatic assertions of philosophy nor any arbitrary counsel where the secrets of science were concerned. The kingdom of Heaven, it may be, cometh not by observation, but that is true of no other thing. Hahnemann, like Darwin and all the tens of thousands of homœopathic investigators of the present day believed that the truth was to be recognized and found by experimenting and observation, and in enunciating that belief he met with opposition and with persecution. It is not in Jerusalem alone that the prophets are stoned; and so this man for the truth's sake endured persecution.

"It is no criticism of the action of this Institute or of the Federal Government that they have placed or permitted to be placed here the statue of a man who never knew or saw America. It is but an added glory that the work he did, the fame that is now his, is recognized to belong, not to Germany, but to the world. I congratulate the gentlemen of the American Institute of Homœopathy on placing in the National Capital this beautiful work of art. Generations of our people to come will pause and view this statue; will look at the figure of the young student bending in thoughtfulness on his book; at the figure of the scientist making his experiments; at the figure of the wise teacher instructing his pupils; and at the grand, the noble, the benignant figure of the great man whose position here to-day, in view of the persecutions to which he was subjected, teaches us to glory in the belief that it can no longer be said that 'Right is ever on the scaffold, wrong forever on the throne,' for here sits Right enthroned before the eyes of the American people, from whom forever and forever more will be contributed its just meed of immortal fame."

At the conclusion of Mr. Griggs' address, and after the applause had subsided, some one in the audience started three cheers for President McKinley, which were given with a will, and which the President acknowledged gracefully. They were followed by three cheers for Chief of Engineers General John M. Wilson, who selected the site for the monument, and then, after another selection by the Marine Band, the ceremonies were completed.

DESCRIPTION OF THE STATUE.

The monument is in the form of the Greek exhedra and is elliptical in plan. Four steps in front lead up to the lesser axis, at the back of which rises the superstructure. The sitting statue of Hahnemann, heroic in size, and mounted on a granite pedestal is placed in the central portion, which is composed of four columns supporting an entablature, above which is an attica, with the inscription, "Hahnemann." On the base of the pedestal is the motto, "Similia Similibus Curentur." Between the two front columns, and forming the background of the statue, is a niche, also elliptical in plan, terminating in a semicircular arch above the impost. The line of the impost continues on either side, forming the top of the curved walls, which end at the extremities of the larger axis of the plan, in decorated amperes crowned with acroteria. The base courses of these walls form seats occupying the space between the central portion and the end terminations. The upper portion of the niche behind the statue is decorated in mosaic, with a design composed of the foliage and flower of the cinchona plant.

On either side of the arch are decorative emblems in bas-relief,

the bowl and serpent, symbols of wisdom, and the lamp and book typical of knowledge and instruction, the former associated with a palm branch, the latter with a wreath of laurel. As the keystone of the arch appears a lion's head, symbolic of strength and leadership. Four commemorative bronze tablets are placed in two panels on either side of the niche, upon the curved walls, representing in bas-relief the four epochs of Hahnemann's life.

EXPRESSION AND POSE.

The statue itself is the culmination of the plan of the monument. By the expression of the features and the pose of the figure it is designed to convey the characteristics of the philosopher, philanthropist and teacher, and, above all, the leader of a great reformation in the medical practice of his period.

As the monument stands in an open space, approachable from all sides, it is sought to make it attractive from all points of view, and much attention has been devoted to the design of the rear. The main lines of the central portion are here repeated with a flat curtain wall divided into three panels for inscriptions, with decorated tympanum above the impost substituted for the niche. This, together with the projecting lines of the amperes, form vertical divisions for this elevation, resulting in a well-proportioned and equally balanced architectural composition. In the centre, filling the tympanum of the arch, are two figues, in bas-relief, emblematic of the science and art of medicine, above which in the attica is the date of erection in Roman numeral. Below the curtain wall is a fountain in the form of a fluted basin fed by a stream of running water issuing from a curved dolphin. On the side walls are the dates of Hahnemann's birth—"Meissen, April 11, 1755"—and death—"Paris, July 2, 1843"—encircled with laurel leaves. The extreme dimensions are forty-six feet broad by thirty feet deep at the base and twenty-two feet in height.

After the ceremony of dedication President McKinley gave a special reception to the members of the American Institute of of Homœopathy and their friends at the White House which, we are told, was decorated as it had rarely been, and was "a vision of beauty." There were about a thousand visitors in all, among whom were members of the Cabinet, many of whom were accompanied by their ladies, representatives of the army and navy, *and* the Surgeon-General of the United States in his official capacity. Mrs. McKinley, though somewhat of an invalid and generally absent on public occasions, graciously and gracefully assisted at this reception.

NOTE ON THE MAL-TREATMENT OF MALARIAL FEVERS AND ITS CONSEQUENCES.

By Dr. Bhoobun Mohun Sircar, L.M.S.

[The evil complained of in the following Note is unfortunately too real to be gainsaid. It has become patent to all except perhaps to the patent medicine manufacturers and vendors, if even to them, for we have had as patients some among the latter who had either become victims of their own nostrums, or had little or no faith in them. We have never lost an opportunity of condemning in the strongest possible terms the use of secret medicines, especially by members of our profession. In the prospectus of our Journal which is printed with every number on the cover, while we express our readiness to allow full and fair play to all the systems of medicine in vogue, and in fact to whatever can be shown to have succeeded in effecting true cures or in relieving suffering where established means bad failed; we at the same time express our preference to simple means and ways, and our thorough contempt for secrecy and mystery which in our opinion is the essence of quackery. But our protests and condemnations have had no effect. Chlorodyne, Fever drops, and a host others, of which the composition is either altogether unknown or very little known, continue to be as extensively used as ever. Even the highest authorities in the profession are not free from the taint of either using patent medicines or manufacturing them. One of the latest glaring instances was the vaunting of "tuberculinum" (of which the composition was kept a secret) as a cure of consumption by no less a person than Dr. Robert Koch, of Berlin, to whom the medical world is indebted for so many discoveries, especially in bacteriology. It gives us pain to observe that even homœopathic pharmaceutists have not been able to resist the temptation of manufacturing secret and patent medicines.

Dr. Bhuban Mohan Sircar is right in saying that the chief ingredient of all the patent medicines that are sold as anti-malarious, is quinine, and that most of them contain in addition iron, purgative salts such as magnes-sulph., and a number of vegetable bitters, the nature of which it is impossible to ascertain. Each of these when used according to its indication may be beneficial, but nothing but unmixed evil can be expected from the indiscriminate use of all these in a hotchpotch mixture in all stages of fever and in all conditions of patients. The use of these anti-malarious patent medicines is still extensive and almost universal, and Dr. B. M. Sircar has done a service by drawing serious attention to their abuse.

Even if the patent medicines contained nothing but Quinine in disguise, their indiscriminate use in all malarious fevers

and in all their stages cannot but be injurious, and ought therefore to be condemned. For it must be remembered, Quinine is a very potent drug which exercises a most deleterious influence on the body, producing chiefly disorders of the nervous system. Dr. A. J. Harrington has drawn attention to this fact in a recent issue of the *Canadian Journal of Medicine and Surgery*: "The craze for ingesting *Quinine*," says he, "in every possible disease has caused an enormous amount of nervous disorders among business men, who keep the drug in their pockets just as they do car tickets. Many of the most serious cases which come under my notice are due to this drug. I feel safe in asserting that *Quinine* causes more trouble to the community than *Morphine*. Drinkers and topers of *Opium* and *Cocaine* are spotted by most of their acquaintances but the nerve-tremors due to the salts of *Cinchona* are put down to overwork, &c. Even medical men are frequently deceived by the symptoms, for I have had many cases sent to me where the cause was never suspected by the family doctor."—ED., *Cal. J. Med.*]

The present wave of malarious fevers which have caused the ruin of so many Mofussil towns and villages of Bengal and other Provinces, seems to have first made its appearance in Jessore, some three quarters of a century ago, making a sad havoc in that flourishing town. Within our recollection it next appeared in the Districts of Burdwan, Hughly, Nuddea and the 24-Pergunnahs in the latter end of the fifties, devastating most of their prospering towns and villages, many of which were once renowned as sanitaria in Bengal. Later on it spread to Rungpore, Rajshahi, Dinagepur and other Districts. Various theories have been advanced from time to time as to the causation of these fevers. Various means have also been adopted to improve the sanitary condition of these fever-striken districts, in the way of clearing the jungles, improving the streets and drains, providing tank, well and filtered waters, excavating canals in lieu of their natural water courses, which had been obstructed by railway and other embankments, and deepening drainage channels silted up in course of time. But it is a matter of great regret, that nothing or very little has been done, either by Government or the profession in the way of providing or suggesting proper remedies to check the progress of the fever in its chronic stage, which is so complicated in its nature and fatal in its consequences.

Quinine is the only medicine which has been found useful in checking the fever, and is accordingly used very largely all over the country both by the profession and the people in the acute or primary stage of the disease to check the fever and prevent its recurrence. But in the rural districts, no regular or systematic

treatment has been enjoined or followed in its chronic or secondary stage to check its progress and prevent the relapses, which are so frequent in these fevers. This is due partly to the want of proper medical aid in villages and partly to the impoverished condition of the people, who can ill-afford to avail themselves of good medical treatment. This gave rise to the manufacture of Patent medicines, which could conveniently be used for days together without any doctor's advice. With few exceptions Quinine was made the staple ingredient of these medicines, combined with purgatives, Iron and vegetable tonics. The large doses of Quinine contained in them promptly checked the fever, and the patients being satisfied with the efficacy and cheapness of the medicines, largely availed of them. Thus within a few years various kinds of patent mixtures, pills and powders, supposed to have anti-malarious properties came into existence and found a ready sale in the market all over the country.

In this way the injurious practice of mixing Quinine, Epsom salts, Iron and other ingredients, all in one mixture and allowing the same to be used in all stages of malarial fevers, both acute and chronic, has become very common and is much to be deprecated. The difference in the physiological actions of these different medicines and their respective effects on the system in the different stages of the disease are altogether overlooked. Their indiscriminate use has thus given rise to serious consequences. In the acute stage of fever with high temperature, Iron acts as a poison—it suppresses the secretions, constipates the bowels, and brings on congestion of the liver, spleen, kidneys and other organs. But at the same time it is one of the best tonics that we have, in improving the blood and renovating the system when administered in the chronic stage, when there is little or no fever. In treating a case of fever, surely no qualified physician will prescribe Iron in its hot stage with thirst, scanty high-coloured urine, constipation, foul tongue and the more or less irritated condition of other organs, nor until the fever has left and the patient has become convalescent. But in using these patent medicines, the patients are obliged to take Iron along with Quinine and its other ingredients from the beginning of the fever, irrespective of its injurious action in the hot stage or until it has left. On account of its repeated use in

that stage in every relapse which is so frequent, the liver and spleen become congested and enlarged, other organs become deranged, the patient becomes weak and anæmic, and anasarca, ascites and other fatal symptoms gradually supervene, terminating in death. In the same way Epsom salt or any other similar purgative, which may do good in the first stage of the fever by clearing the bowels, by its unavoidable continuance for days together, till the bottle is finished, gradually brings on diarrhœa, dysentery and other complications.

This empiric and heterogeneous combination of febrifuges, purgatives, hæmatics and bitter tonics, &c., cannot therefore but be wrong in principle, injurious in action and fatal in its consequences. My long experience of malarial fevers, extending over a period of nearly 40 years, has convinced me that much of the sufferings of the victims of malaria in villages is largely, if not wholly, due to the continued and indiscriminate use of these patent medicines. Those who suffer most in this way are generally the poor and ignorant villagers living in rural districts. In their eagerness and anxiety to get rid of the fever, they buy a patent medicine which sells largely in the village and, after using it for three or four days, they find that the fever subsides or altogether disappears, and they are delighted at the wonderful efficacy of the medicine, not knowing what baneful effects will follow from the poisonous action of Iron and other contra-indicated ingredients, which they have swallowed along with the Quinine, which has checked the fever. Being relieved of the fever they resume their work and after a fortnight or so, get a relapse, when they again take the same medicine, the fever again subsides in three or four days as before and they go to work again, each time in a more exhausted condition than before. As a rule a few relapses yield to the same treatment. In this way suffering from frequent relapses and using large doses of Quinine and Iron every time in the course of high fever, they become more and more weak and enervated, the liver and spleen become enlarged, emaciation follows, dropsy supervenes, vital power comes down to its lowest ebb, and they are reduced to the living skeletons, so frequently to be seen in fever-stricken districts.

It is generally believed that enlargements of the spleen, which are so much noticeable in their various degrees of slightly,

moderately and excessively enlarged, among the poor population of malarial districts, are caused by frequent relapses of the fever. I may unhesitatingly add, that the repeated and indiscriminate use of Iron and other injurious ingredients in all stages of the fever, is another potent factor in enlarging these organs and gradually leading to fatal consequences. Observation has also proved that the percentage of enlarged spleen in the riparian districts is far above the percentage found in inland districts, and the reason of it, is not far to seek. It is the poor and ignorant villagers residing in the outlying rural tracts that largely consume these patent medicines and are consequently the greatest sufferers with enlarged spleen and liver.

The use of these patent medicines has unfortunately become so popular, that notwithstanding all this mischief of human suffering and death, which has been going on for more than forty years, the voice of reason has never been raised to question its righteousness. However palpable the cause may be, perhaps it would be blasphemy for any one to attribute the evil to these favoured bottles, pills or powders which have such a magnetic charm for the poor and ignorant sufferers.

I cannot be too strong in my assertion, that the effects of these patent medicines are more formidable and injurious and less amenable to treatment than those of the malarial poison itself. It is far more difficult and hopeless to cure diseases with complicated symptoms brought on by mal-administration of medicines than in their simple state.

With the few exceptions of patent medicines professed to be made up of indigenous vegetable drugs, the bulk of them are prepared with the same medicines which are recommended and used in our Therapeutics for the treatment of malarial fevers. But the mischief lies in the injurious practice of mixing all of them in one mixture and using the same as a panacea in all stages of the disease, irrespective of the conditions in which each of the medicines is indicated.

Such is the insidious way in which these patent medicines are sapping the vitality of the fever-stricken people of this country, augmenting their sufferings and hastening their death. I think

it is high time that public attention should be called to this lamentable state of things, with a view to bring about a change in the policy, principle of preparation, and the mode of administration of these medicines. The first and simple improvement suggested would be to separate the component medicines according to their indications in the different stages of the disease. Such an innovation on approved principles will be a boon to the country, and every effort should be made and encouragement given to its adoption.

It may be new to the general public that these patent medicines instead of curing these fevers have been aggravating their symptoms, bringing on serious complications and causing death after prolonged suffering. But it is a matter of great regret, that such a wide-spread practice should have escaped the attention of the profession and especially of those responsible medical authorities, who have made malarial fever a subject of their special study and enquiry. One word of warning from them in time would have nipped the evil in the bud, and saved the sufferings and lives of thousands and thousands of the fever stricken people. However, it is a very hopeful sign, that the more intelligent portion of these sufferers from their practical experience are fast losing their faith in these medicines. Be that as it may, and however strong the current of popular opinion may be in favour of these patent medicines, I feel very strongly in the matter and deem it my duty to express my views on the subject for the benefit of suffering humanity.

With these few remarks, I leave the matter in the hands of the profession and the sanitary officers for investigation and for finding out means to check this evil practice.

EDITOR'S NOTES.

Influence of Static Electricity on the Normal Body.

Yvon (*Arch. d'Elect. Méd.*, June, 1900) has made a large number of experiments upon the influence of the electric bath on the elimination of urea and phosphoric acid, and its action upon respiration, circulation, and the body temperature. He immersed himself for two hours at a time in a bath supplied by a Wimshurst machine acting at a potential of 115,800 volts, and driven by an electric motor. When all causes of error, such as changes in the heart and respiration rate had been as far as possible excluded, the author found that static electricity had little or no influence on the healthy body, thereby confirming the original opinion arrived at in 1855 by Duchenne.—*Brit. Med. Journ.*, Oct. 20, 1900.

Apomorphine as a Hypnotic without Nausea.

Douglas (*Merck's Archiv*, June, 1900) points out a fact little known to physicians, that apomorphine acts as a prompt and effective hypnotic if injected subcutaneously in doses of about one-thirtieth of a grain, more or less. The dose should be adjusted as to be large enough to produce sleep and small enough to avoid nausea, and this being only about one-third of the ordinary emetic dose it is quite harmless. Douglas claims to be the first to show its hypnotic value, the *Handbook of Materia Medica and Therapeutics* of Potter (1899) stating that though a derivative of morphine the drug is "neither hypnotic nor narcotic in any degree." In mild insomnia and in furious delirium it was found to produce sleep within 25 minutes. The sleep is refreshing and restful, and no disagreeable after-effects followed. If a delirious patient refuses to go to bed, apomorphine will cause him to voluntarily lie down in a few minutes, and sleep will follow. There is no possibility of a "drug habit" being formed, as it becomes a vigorous emetic if the dose be increased. There are no cumulative effects. The small hypnotic doses usually accelerate the heart's action slightly. It was accidentally discovered that it becomes inert if dissolved in a saturated solution of boracic acid, the action of the drug, both as a hypnotic and emetic, being then completely neutralised. During four years apomorphine was given to 300 patients, and the hypnotic effect failed, or was slight, only in 2 or 3 cases (idiosyncrasy). In such rare and exceptional cases it was also found that the emetic effect did not follow even large doses. Tilton has stated that when used as an emetic in croup it is followed by a decline in the fever. The drug is therefore recommended as a safe one, deserving widespread use.—*Brit. Med. Journ.*, Oct. 20, 1900.

Are Copper Salts Poisonous?

In a paper upon this subject read before the British Association of Science at the Bradford meeting, Dr. T. W. Hime sought to justify the use of copper salts for preserving the green colour of vegetables apparently on the ground that Nature herself placed copper in many of her products. Indeed, Dr. Hime asserted positively that there was

no sufficient ground for the prohibition of the sale of coppered vegetables any more than for the prohibition of the innumerable kinds of fruits, vegetables, shell-fish, cereals, mineral waters, wines, and animal flesh which naturally contained the metal in some form. If the latter drastic arrangement were attempted, he added, absolute and general starvation would be the inevitable result, so widely was the natural presence of copper in articles of food extended. On these grounds Dr. Hime might justify arsenic as a useful food preservative, since it is now known to be a normal constituent of the body, but of course like copper, in infinitesimal amount. We do not object to the plan of preserving the colour of peas by copper, but we do object to the consumer not being made plainly aware that such is the case with the provisions he consumes. Some people like their meat roasted, others do not care a little whether it be baked or gas-cooked; but it is clearly deception when a person is told that a piece of beef has been roasted which instead has been cooked in the gas-oven. Neither does Dr. Hime seem to pay special regard to the important question of personal idiosyncrasy. If the quality of our food-supply is to be State-protected with any degree of efficiency this is a point which must not be lost sight of, for in all the attempts to keep up the health of the community all sorts and conditions of men must be reckoned with. We hope to see very soon a statute which shall definitely control all methods of colouring and of preserving food.—*Lancet* September 15, 1900.

Our Friends and our Foes Amongst Microbes.

Sterilise, sterilise, would appear to be the teaching of bacteriology in regard to what we breathe, what we eat, and what we drink. But it is a moot question whether in the main life is best preserved by killing on all sides the ubiquitous microbe. Certain it is that some foods lose their important dietetic properties on being sterilised, and we have yet to learn whether there are not microbes in the air playing a role in the process of respiration. And if in air why not in food and drink, playing a role in the processes of digestion? Some illustration of the unsatisfactory state of our knowledge of these important questions was given in the first and third sections at the recent meeting of the Tenth International Congress of Hygiene and Demography in Paris. To quote a single example, engineers on the one hand, during the discussion of certain papers on the question Should all drinking water be sterilised? rose and challenged the bacteriologists to say once and for all whether or not all bacteria were injurious. The conflicting opinions contained in the answer of the different bacteriologists left the interrogators in doubt but certainly justified their question. One speaker put the position very pertinently when he reminded his audience that, when Simon de Montfort during the Crusades had captured a town, and was asked the question as to what should be done as all the inhabitants were not heretics, but some of them good Christians, he replied; "Massacre them all and God will recognise His own." In the present state of our knowledge this seems exactly to define our attitude in regard to the treatment of organic life

existing in air, food, and water. The fact that micro-organisms are being employed now with great profit in many industrial pursuits, and more important still in the satisfactory disposal of offensive human excreta, only adds perplexity to the question how far sterilisation can safely go. Doubtless it will be shown that in order to prevent disease set up by organisms we must pick out a means of killing only that species which is pathogenic. Failing this we are probably safest in adopting the plan of Simon de Montfort. We burn the wheat as well as the tares because it must be confessed for the present that we know no better; we cannot exactly differentiate the good from the bad.—*Lancet* September 15, 1900.

Idiopathic Transitory Clouding of Consciousness.

Under the above title Dr. Placzek of Berlin reports some interesting cases in an article recently published in the *Berliner Klinische Wochenschrift*, No. 32, 1900. Two of the cases were examples of temporary loss or disturbance of consciousness amounting to mental aberration and therefore important from a medico-legal point of view. The first case was that of a woman, aged 40 years, who suddenly one afternoon and without any warning became irrational in language and behaviour, gesticulating wildly and talking unintelligibly. This condition lasted for six hours (till 8 P.M.), when she recovered. She, however, had no recollection of her state or conduct during these six hours. It was found that she was menstruating at the time of this attack, but no connexion could be traced between menstruation and her illness. The following day she had a typical attack of migraine with muscæ volitantes, scotomata, and other visual disturbances. She was said to have suffered at times from headache, but she was free from any stigmata, hysterical or epileptic, and her previous history was good. The second case was that of a man, by occupation an engine-stoker, who suffered from an attack of clouding of consciousness. During this condition he failed to recognise his friends and relatives and was very irritable and rough in manner. This condition lasted only a short time and then in the course of an hour he suddenly recovered. He was stated to have been a sufferer from trigeminal facial neuralgia and painful cramps of the muscles of mastication. In discussing the causation of these seizures Dr. Placzek thinks that there occurs in these cases a marked disturbance of the cerebral circulation, and refers to somewhat similar symptoms which are met with in those who have been resuscitated from strangulation by hanging—a conditon in which one of the most marked features is the constriction of the carotid arteries in the neck. It is of importance to recognise that such occurrences as temporary clouding of consciousness and loss of emotional control may occur, apart from epilepsy, hysteria, or insanity, and in persons free from grave neurotic or traumatic taint. Dr. Placzek refers to a few such cases which have been recorded in literature by Azam, Krafft-Ebing, Möbius, Charcot, and Féré, and which possess a practical and medico-legal bearing.—*Lancet*, Sept. 29, 1900.

A New Bacillus of Vaccine Lymph.

Nakanishi (*Centralbl. f. Bakt.*, Bd. xxvii., No. 18) describes a bacillus which he finds constantly present in vaccinia pustules and which he has experimentally investigated. This is present in the epithelial cells of the "vaccine pulp" of calves, either as a rod-shaped form staining in a bipolar fashion or as a spherical or oval form taking the stain less perfectly. In the lymph from children on the other hand the rod form is not found but large round refractive organisms are present similar to those found in calf lymph, which are looked upon by the author as variation forms of the bacillus. Pure cultures of the bacillus were obtained on agar plates both from the calf lymph and from lymph drawn from seven days old vesicles on the arms of children. The organism grows best on solidified blood serum and resembles morphologically the diphtheria and the so-called pseudo-diphtheria bacilli; it is a facultative anaërobe. The younger forms are wedge or "candle-flame" shaped, others are rod shaped, and in old cultures club shaped and rounded forms are common. Experimental inoculations in calves and guinea-pigs were negative. In rabbits intraperitoneal inoculation was also negative in result, but ulceration is produced by inoculation of the cornea and in the epithelial cells of this round or oval bodies are found. These are identical with the bodies described by Guianieri and Pfeiffer in the corneal tissue inoculated with vaccine lymph and in the corneal vesicles in variola and which were considered by them to be probably protozoa. By inoculation of cultures of the bacillus into the arms of several children, a student, and himself, the author was successful in producing typical vesicles. Two other students gave no reaction; possibly they were immune. He argues that the described bacillus is in all probability the specific agent in vaccinia, but with regard to the round and oval forms found in the corneal epithelium he hesitates to decide whether they are really varieties of the bacillus so modified by the unfavourable site on which they are growing or whether they are degeneration foci in the epithelial cells themselves. The fact that somewhat similar shapes are found in old cultures seems to give countenance to the first view. Much evidence has been collected to show that the "protozoa" of Guianieri, the so-called "cytorrycytes variolæ," are characteristic and specific and as the author has produced identical forms by inoculation of cultures of this bacillus, he deduces that the bacillus is characteristic of small-pox lymph, and in all probability the exciting factor in small-pox itself. Further, as the organism resembles the diphtheria bacillus, so he draws a parallel between this disease and variola clinically and pathologically, and finds close analogies.—*Brit. Med. Journ.*, Oct. 20, 1900.

Physiological and Therapeutic Actions of Digitalis and of its Active Principles.

Sir Lauder Brunton presented a communication on this subject in which he summarised his conclusions as follows: (1) The physiological action of digitalis is exerted chiefly (*a*) on the heart, (*b*) on the blood vessels, (*c*) on the secretion of urine. (2) Its action on the

heart is that it (*a*) slows the cardiac beats chiefly by stimulation of the roots of the vagus in mammals, (*b*) increases the force of systole, and (*c*) increases the extent of expansion in diastole. Both *b* and *c* are due to an action on the cardiac muscle. (3) It contracts the peripheral vessels, and thus slows the current of blood through them. (4) By its combined action of contracting the peripheral vessels and of increasing the power of the heart it raises the blood pressure. (5) The diuresis which digitalis produces is chiefly due to increase of blood pressure. (6) Digitalis contracts the arterioles in the kidney sooner than those in other parts of the body. The renal vessels may contract so much as to arrest the secretion of urine altogether, although the general blood pressure is high. (7) When blood pressure is already high, digitalis cannot be expected to have a powerful diuretic action; but if the blood pressure be low, from natural constitution or disease, digitalis will have a diuretic action. (8) Digitalis is a local anæsthetic, but also produces pain. It therefore belongs to the class termed by Liebreich "anæsthetica dolorosa." (9) In large or in accumulated doses it gives rise to gastric irritation. (10) The action of digitalis is due to digitalin, digitaliene, and digitoxin. These principles all have an action similar in kind but differing in degree. (11) The therapeutic actions of digitalis and of its active principles are that they (*a*) regulate the heart's action, (*b*) assist a failing circulation, and (*c*) act as diuretics. (12) The regulating action of digitalis is useful in palpitation and functional disturbances of rhythm. (13) The most important use of digitalis and of its active principles is in the treatment of mitral incompetence due either to disease of the valves or dilatation of the ventricle. (14) In cases of aortic regurgitation digitalis is (*a*) unnecessary and not without danger when compensation is complete, (*b*) very useful when compensation fails. (15) When the blood pressure is already high digitalis may be injurious by increasing it still further, and thus causing symptoms of angina pectoris or tending to produce apoplexy.—*Brit. Med. Journ.*, Sept. 29, 1900.

The Window, The Room, and The Sun.

That light is an essential of health has long been recognised vaguely, but we are now gradually learning to some extent to what the health-giving properties of the sun's rays are due. The depressing and demoralising effects of darkness have been known from time immemorial, and the dungeon was perhaps the worst form of punishment to which a human being could be subjected. It is only comparatively recently that attention has been given to the necessity of providing abundant supply of unfiltered light as well as air to our dwelling places. A little over half a century ago many of the tenements in London were no better than dungeons from the point of view of the provision made for the entrance of light. Indeed, as is well known, glass windows were taxed, this action of the State being itself an incentive to darken the house. The question remains how best to secure the health-giving properties of light whilst excluding various conditions of weather which would give rise to discomfort. In a paper upon this subject which was read at the recent meeting of the Tenth

International Congress of Hygiene and Demography in Paris M. Trelat, a well-known authority on hygiene, gave it as his opinion that the best light for the house is the slanting light as opposed to the vertical and the horizontal lights. Of course the light proceeding in a straight line from the zenith could not be made available, while the light proceeding in a straight line from the horizon, as at sunset, similarly could not be utilised, besides which this light is not so pure, for, as M. Trelat holds, it is deteriorated by passing through successive layers of dust and vapours escaping from the soil. According to this view houses should be constructed to receive the rays of light at an angle of 30 degrees—that is to say, from a space corresponding with the mid-heavens—and, in order to obtain this light houses should not be higher than two-thirds of the width of the street. If a street, for example, were 30 feet wide the houses on each side should not be higher than 20 feet. We are afraid that there are very few houses and streets complying with this standard. The suggestion is, of course, not to cut down our houses, but to widen our streets—a suggestion with which everybody would be in accord were it possible economically to carry it out. The question of the presence of microbes at different air levels must not, however, be ignored. Bacteriological experiments have shown that the air near the ground is loaded with micro-organisms, the number diminishing as we ascend. The difference is most marked even in the case of a five-storey building, the air in the top storey being comparatively free from microbes, while that on the ground-floor swarms with them. This state of things would be altered if the sunlight were admitted properly on all floors, for sunlight is a powerful bactericide.—*Lancet* September 15, 1900.

The Famine in India.

For the week ending July 7 there were 9,928 cases of cholera in the famine district, of which 6,474 were fatal. In the native states there were 9,526 cases, of which 5,892 were fatal, Speaking of the result of his observations and inquiries, Dr. Klopsch, who has just returned from two trips into the famine district, going first five hundred miles into the interior from Bombay, and then an equal distance north, covering more than two thousand miles, says :

"One-half of India to-day is a great charnel house, in which countless thousands have already perished of cholera, plague, dysentery and starvation, and as many more are doomed to a like fate. Twenty thousand new cases of cholera weekly, with seventy-five per cent. mortality, representing fifteen thousand deaths every seven days; plague on every hand, dysentery mowing down its victims right and left, and starvation staring millions in the face, reaping a harvest unprecedented, sums up the horrible story."

Dr. Klopsch said that from the first of the year 300,000 famine victims have died, a number equal to our losses in the civil war, and that the average daily death roll in India is 10,000, while the famine stricken area includes 50,000,000 inhabitants. A prominent English writer, who has lived many years in India and studied the question with great care, in fact giving chapter and verse for all his statements

in what he claims to be well established facts, attributes the cause of this famine, more terrible than anythig of the kind in the history of the world to the great poverty arising from the taxation of English rulers and the removal of the money from the country. The ruins of thousands of reservoirs, in which formerly the water was stored for irrigation, he says, are scattered all over the land, neglected by the government, and the people unable to keep them in repair from the weight of taxation—the removal of the money from the country, a lack of remuneration for labor and a destitude which has no equal in the world. In the cause given for the famine and the terrible death rate we simply quote the statement of a prominent English writer, confirmed by influential men of his own people, who speaks from personal observation of the actual condition.

The recent news from India that an abundant fall of rain is opening a brighter prospect to the desolate country and its famine stricken people will be received everywhere with a feeling of relief. Will it not be possible for the home government to take such steps as will prevent in a measure a repetition of a similar disaster?—*Medical Times*, September, 1900.

Intoxication by Cannabis Indica.

In the September number of the *Edinburgh Medical Journal* Dr. James Foulis of Edinburgh gives a lengthy account of two cases of poisoning by Cannabis Indica. The patients were brothers, A and B. A was 22 years of age and was a medical student in his third year; B was 20 years of age, an art student, and of a highly strung and sensitive nature. Both of them were tall and powerful, being nearly six feet in height. When Dr. Foulis, who had been hurriedly sent for, arrived at their house he found them in the dining-room, alone and only partially dressed. A was hanging tightly on to B who was rushing round the table in a very excited state, widely throwing his arms about and singing in a most jovial manner. A was evidently doing his best to control B; he looked pale and depressed as if overweighted by some sense of heavy responsibility. Both in mind and body B was in a state of extraordinary excitement. He appeared as if he could not talk fast enough and as if his arms and legs were acting automatically. B threw his arms round Dr. Foulis in a loving embrace and spoke most kindly and even tenderly to him, then all of a sudden he began to quote poetry and in an excited manner asked which poet Dr. Foulis liked best, naming several one after another. As the other inmates of the house were unable to control the young

men they were removed to the Edinburgh Royal Infirmary where they arrived about 1 A.M., two and a half hours after having taken the drug, and at 9-30 A.M. they were sufficiently recovered to return home. A, the medical student, afterwards wrote a description of the occurrence, in which he stated that with a view of experiencing the wonderful dreams said to be produced by haschish or cannabis Indica his brother and he on three successive occasions took doses of the drug. On the first occasion they took 25 minims of the tincture, on the second occasion (a week later) they took over 40 minims, and on the third occasion (three weeks later) they took over 90 minims, with the results above described. In about 20 minutes they both began to feel exhilarated. A felt decidedly pleased with himself and versatile. Then one of the figures in a drawing at which he was looking began to nod and whirl round. Suddenly he felt himself carried away as it were by a whirlwind and finally lost consciousness. The next thing he remembered after regaining consciousness was the room heaving up and down. When Dr. Foulis arrived on the scene a most vivid picture presented itself to A's mind. He seemed to see Virgil and Dante standing on a rocky ridge overhanging a deep abyss whence were issuing multitudes of lost souls on their way to Hades. A imagined himself standing on that ridge watching the unending and ever-moving throng passing out of sight. The effect of the drug lasted to some extent for three or four days, during which they were in an extremely unstable state of mind and had to keep a constant guard over their actions. On the afternoon of the following day B had another attack. B's account of his dreams on falling asleep at the Infirmary was as follows: "Upon falling to sleep I experienced the most exquisite dreams. The sky was scintillating with delicate colours rapidly succeeding one another. Then came shifting landscapes of unimaginable beauty, following fast upon each other, and all too quickly disappearing." It is of some interest to compare the foregoing account with Mr. Havelock Ellis's description of the intoxication produced in himself by mescal buttons (the fruit of the Anhalonium Lewinii) as recorded in THE LANCET of June 5th, 1897, p. 1540 —*Lancet*, Sept. 29, 1900.

CLINICAL RECORD.

Foreign.

A CASE OF PLEURO-PNEUMONIA IN THE FALL OF 1897.

By AUGUSTUS VON DER LUHE, M.D.,
Borough of Brooklyn, New York City.

Patient—A boy 9 years of age. Complexion, fair. Previous health, good. Had a cold a few days previous; going to school. On October 21st, in the morning, while at school had a severe chill; so that it shook him all over. Following this, was a severe pain in the lower half of right lung and pleura. He had to come home from school at 10 o'clock. He cried out with pain, and could notdraw a long breath. After 1 in the afternoon I called on him. I found him suffering from intense pain; so that when he took a breath, or coughed, he would cry out with pain. As soon as he saw me. he said: Oh, doctor, hurry up and give me something for this pain! Had a dry and severe cough. The lower half of the right chest was so sensitive that you could not percuss. On ausculation found creptitant rales in the lower half of right lung. Least motion or breathing would aggravate pain. Pulse, 120; temperature, 103; respirations, 36; breathing, short and anxious. Had the pneumonic flush on both cheeks. Diagnosis, pleuro pneumonia. Prescription, *Bryonia* (200c) in water—one teaspoonful every hour. In conjunction with this had flannel bags filled with salt and applied, as hot as he could bear them. Saw him after 8 that evening. Pulse, 132; temperature, 104; respirations, 36. The severe pain had left after taking the medicine. Three hours could breathe easier. Dry cough distressed him some; still very sore on pressure. Continued *Bryonia* (200) in water, every two hours. On the day following he was seen after 10 in the morning and between 8 and 9 at night. Diet, broths and milk. No stimulants; and never use them on any consideration in pneumonia. The indicated remedy is what keeps up the strength and combats the disease.

October 22nd, morning, temperature, 101; pulse, 116; respirations, 36. Had a very restless night, and was very delirious. In his delirium begging that the teacher would let him go home. Felt better in every respect; not the least pain on breathing; cough looser and raising a whitish phlegm. *Bryonia* (200) every two hours. Evening, temperature, 102 4-5; pulse, 116; respirations, 36. Had a good day; same remedy. October 23rd, morning, temperature, 101 4-5; pulse, 108; respirations, 32. Slept all night without the least of delirium. Flush on cheeks. Cough with loose phlegm; same remedy every two

hours. Evening, temperature, 101 4-5; pulse, 108; respirations, 32. Passed a good day; same medicine. October 24th, temperature, 103 1-5; pulse, 108; respirations, 32. Rested well, until 3 A. M., when the fever increased and he was delirious; cough loose, but larger quantities of phlegm slightly specked with blood. Coughing made the right side feel sore. The sensation of weight and pressure on chest. Gave *phos.* (200c) every two hours. Evening, temperature, 101 4-5; pulse, 96; respirations, 32. Passed a good day. Less soreness on coughing. *Phos.* (200th) every two hours. October 25th, morning, temperature, 103 3-5; pulse, 104; respirations, 28. Had a good night, until 3 A. M., when the fever increased and he was restless. Cough better. Found slight twitching in muscles of the body. The pulse strong and full but would intermit the fourth or fifth beat. Complained of feeling dizzy, when he raised himself. Gave *verat. viride* (30) every two hours because I did not have the 200th. Evening, passed a good day. Appetite a little better. Temperature, 100 4-5; pulse, 88; respirations, 28. Continued *verat. viride* (30) every two hours. October 26th, morning, temperature, 99 1-5; pulse, 84; respirations, 28. Slept good all night. No twitching in muscles; pulse full and strong and no intermission. *Verat. viride* (30). Evening, temperature, 99 1-10; pulse, 78; respirations, 24. Passed a very good day. *Verat. viride* (30). October 27th, morning, temperatnre, 98½; pulse, 80; respirations, 18. Had a good night. Complained of having a severe pain in head every time he caughed. Cough was a little tighter. Headache present, aggravated by cough. Gave *Bryonia* (200) every two hours. Evening, temperature, 99 1-10; pulse, 80; respirations, 18. A good day; cough looser. Headache better. Continued *Bryonia* (200). October 28th, morning, temperature, 98½ pulse, 77; respirations, 18. Slept all night; no headache; cough looser, causing no pain in head. Phlegm white and thick; *Bryonia* (200) every three hours. Evening, temperature, 98 4-5; 78. Spent a good day. Appetite good; also had gained strength. Diet, fruit and broths. Would have gone out of the bed, if I had allowed it. October 29th, morning, temperature, 98 9-10; pulse, 76; respirations, 18. Had paroxysms of coughing early in the morning, and raising a great quantity of white, thick phlegm. Cough caused the right chest to feel sore, and also if a heavy pressure was on the chest. *Phos.* (200) every three hours was given. Evening, temperature, 98½; pulse, 72; respirations, 18. Cough better and paroxysms at longer intervals. Was up all day playing in the room. Took, besides the regular food and fruit, grape juice one-half glass, three times a day. October 30th

and 31st, and November 1st, temperature, pulse and respirations normal. Used those three days, *Phos.* (200) every three hours, cough having almost disappeared. November 2nd, temperature, pulse and respirations normal. On auscultation, breathing was almost natural. On percussion, there was some soreness over part of lung, where the inflammation had existed. Gave *Lycopod* (200) every three hours. November 3rd, temperature, pulse and respirations, normal. No cough. The area of soreness diminished. *Lycopod* (200) three hours. November 4th, on examination, hardly any soreness. Same remedy. November 7th, gave him a thorough examination. Found on percussion, slight soreness on the edge of lung bordering over liver. On auscultation found breathing normal. *Lycopod* (200) four times a day for a week.

This case proves that the indicated remedy never fails to do its positive work. Nearly two years have elapsed since this attack. The boy has enjoyed the best of health.—*North American Journal of Medicine*, September, 1900.

A CASE OF PARALYSIS OF THE SPHINCTER VESICÆ.

By E. R. McIntyer, B.S., M.D.,
Professor of Neurology in Dunham Medical College and Hospital, Chicago.

Conium is a drug that has been neglected to some extent by the profession, perhaps from a lack of knowledge of its true action and a misconception of its true symptomatology. In reading the different authorities on *Conium*, nothing is more apparent than the contradictory statements found therein. One says delirium appears in a few minutes, while another says the mind remains clear until very late.

Probably the best picture we have of the action of the drug is in cases of accidental poisoning from which we can eliminate the results of imagination. These would seem to show that the lower end of the motor columns of the spinal cord receives the first shock of the drug, from the motor paralysis of the legs, as expressed in "soon afterwards" (after taking the drug) "there was a loss of power in the lower extremities, but *he apparently suffered no pain.*" (Italics mine.) "In walking he staggered like one drunk; at length his limbs refused to support him and he fell. On being issued his legs dragged after him, or when his arms were lifted, they fell like inert masses, and remained immovable; there was perfect paralysis of the upper and lower extremities within two hours after taking the poison. There was loss of power of deglutition, and partial paralysis of sensation, but no convulsions, only slight occasional motions of the left

leg; the pupils were fixed. Three hours after eating the hemlock, respiratory movements had ceased. Death took place in three hours and a quarter. It was evidently caused by gradual asphyxia from a paralysis of the muscles of respiration, but *the intellect was perfectly clear until shortly before death.*" (Italics mine.) I wish to direct special attention to the condition of the intellect, because the author, after quoting the case, says: "The patient seems to have died of apoplexy." It has been claimed that this drug acts first on the peripheral nerves, but this is contra-indicated by the absence of sensory symptoms appearing at the same time and in the same area as the motor paralysis.

It seems to me, from all the records I can get, that the drug is a paralyzer of (1) the motor columns of the lower end of the spinal cord, gradually extending up these columns, from which it next attacks (2) the sensory columns, (3) the digestive organs, (4) the glands and blood-vessels, through the vaso-motors, (5) the brain, and (6) the heart. Thus it destroys the function of one organ after another until the life forces are all destroyed. It is fair to infer from the case quoted that the heart did not cease to beat for a quarter of an hour after respiration ceased, for it reads: "Three hours after eating the hemlock, the respiratory movements had ceased. Death took place in three hours and a quarter." Other cases of poisoning go far to support this theory. So if we have a case in which motor paralysis first appeared in some organ or part supplied by nerves given off from the lower end of the spinal cord, and progresses in the order given above, producing sensory, digestive, glandular, circulatory, cerebral, and cardiac symptoms, we have a pretty fair picture of *Conium.*

It is not always necessary, however, that the feet should be paralysed, or that the symptoms have extended beyond the part first attacked.

A case from practice will illustrate this point, as well as the importance of pure Homœopathy in the treatment of cases that are incurable by any other means. I relate it in full because I look upon it as a very remarkable case, everything considered.

Mr. J. K. Railroad engineer, aged 78. Followed his occupation for more than fifty years until the last two years. Was a Union soldier during the rebellion, and had chronic diarrhœa for three years afterward. His father died at the age of 109, probably from apoplexy, since he said he ate a hearty meal and lay down and died. Mother died at the age of 85. Had thirteen brothers and sisters, all dead but two. Six died under 40 years of age, one of diarrhœa, one of diphtheria, one of Bright's disease, and the cause of the other's death is not known.

Mr. K. came to the clinic for nervous disease in the Dunham Medical College on October 12, 1899. Was always well until six years ago, when he was attacked with inability to retain the urine. He could force the urine out of the bladder at will, but could not retain it. There was pain in the lumbar region of the spine. He had been treated by all kinds of doctors, from the best in the allopathic school to the so-called homœopath, steadily growing worse. Somebody operated on his bladder, only to make him worse.

There was constant dribbling of urine, his clothes being wet to his shoes, and a strong urinous odor that was constantly with him. On attempting to pass his urine it would start and stop, start and stop again. A little milky substance escaped on attempting voluntary urination. There was absolutely no other symptom.

℞. *Conium* 3x, three times a day for a week. He was referred to the surgical clinic for examination for calculus, which was not found, but a stricture was broken up.

October 19. Improving. Urinalysis shows urine normal. ℞. *Sac. lac.*

November 9. Still improving. ℞. *Sac. lac.*

November 16. Improvement. ℞. *Sac. lac.*

November 23. Getting along remarkably well. ℞. *Sac. lac.*

December 7. Much better generally, but a little trouble with the bladder occasionally. ℞. *Conium* 1m, one dose.

December 14. Some dribbling of urine, but feels pretty well. ℞. *Conium* 3x, three times a day for three days.

December 21. Steady improvement. ℞. *Sac. lac.*

December 28. Holds urine better; appetite better. ℞. *Sac. lac.*

January 4, 1900. Steady improvement. ℞. *Sac. lac.*

January 11. Not feeling well, severe lumbago. ℞. *Nux vomica* 3x, four doses.

January 18. Pain at root of right sciatic nerve, better from rest, worse from motion, bladder still leaking some. ℞. *Sac. lac.*

January 25. Bladder about the same; back much worse; sciatica gone. ℞. *Sac. lac.*

February 1. Back better, but bladder a little troublesome; dribbles some. Made a run on the engine since last seen. ℞. *Conium* 3x.

February 8. Bladder still troublesome; some backache. ℞. *Sac. lac.*

February 22. No incontinence for a week. ℞. *Sac. lac.*

March 1. Been running his engine, making nightly trips to Clinton, Iowa. Has a cold; pain in back, better from rest and continued motion, but worse on beginning to move. ℞. *Rhus tox.* 30.

March 8. No complaint except weakness. Back and bladder giving no trouble. ℞. *Sac. lac.*

April 12. Had no trouble with bladder. Had grip, which left him very weak. A cough and tightness across the chest, spits up white mucus, cough aggravated by cold air ; hoarseness, cannot speak above a whisper at times. ℞. *Phos.* 6x, four times a day for three days.

April 19. Feels weak, oppression of chest, but not so bad as last week. ℞. *Sac. lac.*

May 3. Feels stronger and better, bladder bothers a little, leakage about gone. Has to hurry to pass urine when the desire appears. ℞. *Sac. lac.*

May 10. Feels stronger ; general improvement. ℞. *Sac. lac.*

Since the last date he has reported steady improvement almost every week. and received placebo. He looks fifteen years younger than when first seen, and walks several miles daily. He is, as he expresses it, "a well man."

I have said that *Conium* acts first on the motor columns of the spinal cord. This case is a fine illustration of this, since the history of the jolting on a locomative for years could only lead us to look to the lower end of the cord for the irritant, and the sphincters of the bladder are supplied from the sacral plexus, while the body and fundus are supplied by fibres from the hypogastric or pelvic plexus of the sympathetic. This is an important point to know for other reasons than the application of remedies ; since I knew of an expert (?) witness for a street car company who made himself quite ridiculous by testifying in court that if the bladder is affected from an injury to the spine the walls will be paralyzed, rendering it impossible for him to pass his urine. Had he known the above bit of anatomy he could not have been led into that blunder, and his testimony would not have lost its power before the jury. —*Homœopathic Recorder*, Sept. 15, 1900.

CASES BY PROF. H. V. HALBERT.

Case 1. Chronic Gastric Catarrh ; Nux vomica.

Mrs. H., age thirty-seven, family history negative. Came to my clinic for relief from a chronic stomach trouble. She said this dated from a currettement of the uterus following a miscarriage about six months previously. Since this time she has had pain in the left hypohcondriac and epigastric regions. This pain comes on immediately after eating and is caused by any kind of food.

The stomach at times not only refused food but often discharged

it by emesis. The tongue was always coated and she complained of sour and bitter eructations; acids were welcome. The bowels were irregular and very unsatisfactory in their movements; at one time there would be diarrhœa and again constipation would follow. As a result of this intestinal indigestion fermentation was bothersome.

Preceding the exacerbations of stomach irritation the patient suffered with severe nervous spells in which despondency was a decided factor. She became irritable and ill-humored and was rapidly drifting into a state of hypochondria.

Nux vomica 3x was given six times daily and the result was remarkable. In addition to this she was advised to drink one-half glass of hot water, with a few drops lemon in it, before each meal.

Just how much the reflex disturbance from the operation had to do with this case it is hard to tell, but it seems that a latent case of gastritis may be developed by any extreme experience of this kind. Possibly, too, the use of chloroform was an exciting cause. The gastritis, however, had no doubt existed in a mild form for some time. It is just such indolent cases as this which call for nux vomica. Then, too, much must be ascribed to the neurasthenic state which always preceded the attacks; this is another indication for nux.

We also find that nux is called for in stomach cases when there is an indolent or debilitated condition of the mucous membrane. In such cases the patient is always disturbed by food, vomiting occurs and there is an unnatural appetite. The hydrochloric acid is always deficient and hence certain acids are preferred, although there are abnormal fatty acids which are eructated. In the nux patient everything is irregular; the appetite is one day poor and another time good; the bowels are constipated and then diarrhœic; often water agrees and then it cannot be tolerated; the mind is also up and down; one day the patient is happy and again decidedly "blue." These peculiarities of the nervous system are features which we should not forget or overlook when nux vomica is called for.

The cure in this case was quick and decided.

Case 2. Migraine; Sanguinaria.

Miss B., a young lady twenty-two years of age, came to me for a severe hemicrania which had caused her much suffering for six months or more. Her vocation was an exacting one and, being of a nervous disposition, her constant application to work was no doubt the exciting cause. In addition to the mental and nervous fatigue caused by her overwork, there was a history of rheumatism and uric acid, in considerable amount, had been found in the urine.

The paroxysms seemed to return with decided severity about once a month and they generally lasted about a week without any relief, even from opiates. It was noticed, too, that the spells were most severe during the evening. The pain always began in the occiput and settled with greatest force over the right eye, finally involving the right trifacial region. Attending these there was more or less nausea, but of the propulsive character.

Sanguinaria 3x was given to this patient continuously for several weeks. It was prescribed for the clearly indicated symptoms. The right sided pain ending over the right eye and then radiating in the supra- and infra- orbital area, the exacerbation during the evening, the peculiar vomiting, etc., were sufficiently typical symptoms calling for the remedy.

In the course of six months the case was absolutely cured, and it is now a year or more since any pain of the kind has recurred.

I report this simply to show what results may be obtained by careful consideration of cardinal symptoms and the persistent use of a remedy The trouble is we seek immediate relief which is not possible without opiates or heroic remedies. By such methods a cure is not possible and for that reason the inevitable result is an operation upon the trifacial.

A CASE OF INCIPIENT PHTHISIS.

By Dr. B. W. Henderson, M.D.,

A woman thirty years of age, caught a severe cold a few months before I saw her and came to my office with all the signs and symptoms of incipient phthisis. She had a cough, night sweats and a temperature every afternoon varying from 99·4° to 100°.

Examination revealed a very rough, jerky inspiration, prolonged expiration, and a few moist râles in the infraclavicular region of the left side. The microscope confirmed the diagnosis of phthisis. Tuberculin 6x was prescribed internally with inhalations twice daily of iodoform with oil of thyme and oil of pine needles.

At the end of one month the cough and night sweats had ceased, the temperature was nearly normal and she was feeling stronger; the sputum, however, still showed the presence of tubercle bacilli. I did not see this patient again for two months, and the only sign present then was a slight roughness of the inspiratory murmur. The sputum was free from tubercle bacilli. One month later this patient was discharged as cured. I have examined this patient twice in the last year and a half and have found not the slightest indication of any tubercular trouble.—*Clinique*, September 15, 1900.

Gleanings from Contemporary Literature.

POISONOUS SNAKES AND SNAKE POISON.*

By Gustav Langmann, M.D.,
of the Department of Pathology, College of Physicians and Surgeons,
Columbia University, New York.

The zoological order Ophidia is popularly divided into non-poisonous, or harmless, and poisonous snakes. Such division appears quite natural, yet it is neither practical nor is it based on anatomy or biology; for in practice it is impossible to distinguish an innocent snake from a similar poisonous one by easily recognized characteristics. Harmless and some poisonous snakes have certain anatomical features in common.*

Snakes are provided with two rows of palatal teeth besides the usual marginal teeth of the upper and lower jaws; both run almost parallel. The teeth, solid pointed hooks, are curved backward; they are used for hooking the prey rather than for purposes of attack or defence. When the very dilatable mouth is repeatedly opened, the teeth are at the same time thrown forward so that the prey is gradually dragged down into the widely distensible œsophagus. In the innocent snakes the teeth in both jaws extend back almost to the commissure of the mouth; in the poisonous snakes, however, the strength of the whole row of marginal teeth of the upper jaw is, as it were, concentrated into one powerful tooth, the poison fang, which projects at the distal end of the maxilla. It is true, you will often find two or three teeth at this point; these are succedaneous teeth, which fix themselves into place when the snake has broken the main fang or lost it while shedding its skin. Such a fang is, as a rule, replaced by a new one about every six weeks; the old one is loosened by odontoclasts in Howship's lacunæ, just as are the milk teeth of an infant.† The fangs are firmly inserted, standing immovable in one family of the venomous snakes the Colubridæ venenosæ, to which the cobras and hydrophids belong; in the other, the Viperidæ, including the true vipers and pit-vipers, they are erected for biting and are folded like a pocket-knife when at rest. This mechanism works in this way: the pterygoid muscles act on the shortened and vertically situated maxilla in which the fang is firmly fixed.

Another division is sometimes made by classifying the snakes according as they have short, cone-shaped, furrowed fangs, or are provided with long, pointed, tubular ones. This condition is brought about developmentally in the first instance by the folding of the dentine, which leaves a longitudinal furrow along the anterior surface; and in the second by a complete approximation, which produces a perfect tube. To the first class, the Proteroglypha, belong the Hydrophids and Elapidæ, or cobras; the latter class, the

* A fact which is indicated by the usual division of snakes into Colubridæ, comprising all harmless snakes, Colubridæ venenosæ and Viperidæ.

† Katharinor: Wurzburg. Sitzungsber., 1896.

Solenoglypha, comprises the vipers and pit-vipers. The intensity of a poisonous bite is not dependent upon the shape of the fangs, except that a longer tooth, such as that of the viperine snakes, is capable of injecting the poison to a greater depth; indeed, the viperine poison apparatus is the most perfect of any in the venomous snakes.

We have to consider a third class of poisonous serpents, the so-called Opisthoglypha, the furrowed fangs of which, as the name indicates, are situated toward the rear of the mouth. There has long been a doubt as to whether they should be classed among the poisoners, and for this reason they were grouped together under the name of "suspecti." Recent investigations, however, have proved to a certainty that they also poison their prey, which mostly consists of small, cold-blooded animals. Catching them first with the innocuous front teeth, they push them gradually backward into the reach of the poison in the back teeth, to the action of which they soon succumb.

The poison apparatus is completed by the addition of the poison gland, which is closely in contact with either side of the skull, directly behind the eye, and is, under the influence of the overlying masseter muscle. In some small East India snakes, Callophis, the elongated glands extend into the abdomen, so that they are emptied by a vigorous contraction of the muscles of the whole body. The efferent duct of the gland does not lead directly into the hollow of the fang; if it were so, every shedding of a fang would necessitate the formation of a new duct; the glandular secretion flows into a groove of the mucous membrane, which adapts itself directly to the base of the fang.

Let us now consider the poison apparatus. The poison glands, button, tube, or almond shaped, with anterior elongated duct, are situated behind either eye, and when extraordinarily developed, as in the Crotalids, give to the head that triangular shape which was erroneously considered the characteristic of all poisonous snakes, and which gave to some species the name Trigonocephalus. The glands are the homologues of the common parotid; of the latter it is also well known that it alone produces an albuminous secretion. As to structure, they belong to the compound racemose glands with elongated acini; the glandular substance has columnar, the duct pavement epithelium. They respond to the action of belladonna exactly like any parotid gland.

A slight thickening of the duct is caused by a circular constrictor muscle so that the snake is able to retain its secretion at will; and indeed it may be thus retained and not used for months. While the mouth opens, nothing flows out, and only when the masseters in closing the jaw compress the glands, a fine stream squirts out of the pointed teeth. The secretion of the other salivary glands and of the mouth is alkaline, while the poison is always acid. The color of the latter varies from a straw or greenish-yellow to a deep orange. The viscous fluid, either clear or turbid (bitter in Naja), is not odorless, as often asserted; it has a specific smell for every species, which is not easy to describe, but easy to recognize, thus the odor of

crotalus poison may be called "mousy"; its specific gravity varies from 1·030 to 1·077; the solids are variously stated as from twelve to sixty-seven per cent.; my own samples are mostly dried down to twenty-five or twenty per cent. of the original weight. The dry poison cracks in scaly translucent chips of a light yellow or deep brown color, and also has a characteristic odor. Fresh poison under the microscope shows nothing but a few scaly epithelia and a number of finely granulated, amorphous, albuminoid masses, which undergo no change in a hanging drop, even after a long while.* It was often and even is to-day asserted that bacteria or cocci exist in the poison. To establish this positively, I sterilized my collecting apparatus thoroughly, and not the least sign of bacterial life was seen in broth or gelatin cultures of the fresh poison; also in acid media in which the experiments were repeated, no trace of life was to be found. In order to determine whether the poison which itself destroys life might for that reason be free from microbes, I mixed fresh poison with bacillus subtillis and bacterium coli for one-half hour and then inoculated it on gelatin. The growth was lively, even more lively than in the control plates, probably because the gelatin was liquefied at the points of contact with the poison.† A bacterial action, therefore, cannot be assumed; the rapidity alone with which the poison acts in the system would exclude bacterial influence. What, then, is its active constituent? The first chemical analysis was made in 1843 by Prince Lucien Bonaparte, who established the albuminous nature of viper poison and called the poison "viperin." Almost twenty years later, 1861, Weir Mitchell found a similar proteid in crotalus poison, which he named "crotalin." Other investigators claimed to have found alkaloids orptomains, when Weir Mitchell again, in conjunction with Reichert, published, in 1883, the results of their studies, that the active principle of snake poison was an albuminoid, but instead of one they had discovered two. One of them, easily dialyzable and coagulable by heat was called venom-peptone; the other, not dialyzable by heat, venom-globulin. The proportions of both were not alike in cobra and crotalus poison; even among the Crotalidæ they found wide differences. Thus cobra poison

* It may be of interest to describe my method of collecting poison. It ought to be said in advance that poisonous snakes, as a rule—at least those of our country—are of timid and retiring, rather than of an aggressive disposition. They are taken out of their cage with a curved stick on which they remain hanging, afraid to fall. Then they are laid upon a table or upon the floor, and while they are stretching out to crawl away, their head is tightly pinned down to the table with the stick. The index finger and thumb thereupon grasp the neck of the snake behind its head so firmly that it cannot be turned. A funnel over which a chamois skin or thin rubber is tightly drawn is held in front of the snake, which throws both of its fangs through the cover of the funnel; the poison drops out of the fangs into the funnel and into a glass beneath the latter. While the snake is holding on, its glands may be compressed to squeeze out the last drop. The liquid poison is either mixed with equal parts of glycerin or it is dried under a bell-glass with sulphuric acid or calcium chloride.

† Experiments carried out by Dr. A. V. Moscheowitz with sterile snake poison have demonstrated that it liquefies gelatin like some digestive ferments, e.g., trypsin. Wehrmann (Annales Pasteur, 1898) finds that it peptonizes fibrin weakly and does not saccharify amylum.

had ninety-eight per cent. of peptone and two per cent. of globulin, but moccasin venom had ninety-two per cent. of peptone and eight per cent. of globulin, diamond-back only seventy-five per cent. of peptone and twenty-five per cent. of globulin. Besides the proteid, there are a coloring substance, several salts, and some fat. Mitchell's report was mainly corroborated in 1886 by Wolfenden in England, who discovered globulin and several albumins in variable proportion in the poison of cobra and daboja: one of the latter he designated serum albumin; the other, corresponding to Mitchell's peptone, syntonin or albumose. Kanthack's analyses likewise demonstrated the presence of a proto and hetero-albumose in cobra poison. Martin and McGarvey Smith found also a harmless albumin and two very toxic albumoses in the poison of the Australian snakes. It may be asserted that in no instance has a definitive analysis of any poison been worked out to this day, but all investigations center in this one fact, that the active principle in all snake poisons is some form of albumose.*

In default of accurate analyses, I will use the convenient terms, venom peptone and globulin, in our further discussion. Not only do the various poisons differ in the percentages of peptone and globulin, but also in the toxicity of the constituents themselves.† The venoms retain their efficacy for long periods of time under suitable conditions; poison, when dried or mixed with glycerin, has proved itself as active as fresh poison, even after a lapse of twenty-two and twenty years respectively. Freezing continued through weeks does not alter it; putrefaction destroyes it after a long time, but it is soon changed by heating when the temperature is raised to different heights, according to the different chemical composition. The easier coagulable globulins are rendered innocuous at 80° C., while the peptones are destroyed only by applying heat for hours. The coagulated proteïds are inert in this condition, but they regain their toxicity when redissolved. It is the more or less evident capability of chemicals to coagulate proteids which determines their relative power of destroying the efficacy of venoms, when they are mixed with the poison in a test tube for experimental purposes. Alcohol renders it inert for a time only. Absolute alcohol seems to coagulate all poisonous ingredients, but the presence of an infinitesimal part of water is sufficient to retain the toxicity of the supernatant fluid. Poisonous serpents, when preserved in alcohol, have to be handled, even after years, with the greatest care, as has been demonstrated by a fatal accident to an assistant in the St. Petersburg Museum.

The physiological effects of both ingredients named, whenever they are

* It is well known that albumoses, the products of the hydration of albumin formerly called propeptones and accurately defined by Kuhne and Chittenden in 1884, differ widely as to their toxicity. While our modern means do not allow yet a chemical differentiation of those albumoses generated by superheated steam by gastric digestion, by bacili or—as in our case—by the parenchyma-cell of a gland, the varying reaction of the more sensitive living organism toward them demonstrates decisively their different natures.

† Gastric digestion does not influence snake poison; the action of the oile, however, and of the pancreatic juice destroys it.

tested separately in animals, are widely different. The peptone, though causing some local œdema, is more productive of general symptoms, which commencing as irritation, twitching, and convulsions, finally end in paralysis; paralysis of the respiratory center is especially characteristic. The globulin, on the contrary, incites a violent local reaction with hemorrhages around the point of injection, hemorrhages of the mucous membranes, and destruction of the coagulability of the blood. The latter phenomenon recalls to us the results of experiments performed on animals with peptones and albumoses of digestion. Kühne, Pollitzer, Schmidt-Mülheim, Shore, and Matthes found in a large number of these experiments not only characteristic hemorrhages and necroses, but also paralyses, the intensity of which was in correspondence with the higher hydrolysis of the albumoses.

Leaving aside the cases of almost instantaneous death which are due to general thrombosis, especially when the venom has been accidentally injected into a large blood vessel, we usually see about the following symptomatology. We will consider first the less complicated picture of the effects of a cobra bite; too small, scarcely visible punctures in the skin are found, whence radiates a burning and stinging pain with gradually extending œdema. Within an hour, on an average, the first constitutional symptoms appear—a pronounced vertigo, like that of drunkenness, quickly followed by weakness of the legs, which is increased to paraplegia, ptosis, falling of the lower jaw with paralysis of the tongue and epiglottis, inability to speak and swallow, with fully preserved sensorium. A mass of viscous, frothy saliva is constantly dribbling from the open mouth; nausea and vomiting set in; the paralysis becomes general, the patient lies motionless. The pulse, a little accelerated, is somewhat weaker in the beginning, but keeps a moderate strength until even a few minutes after the cessation of respiration. The latter, also accelerated in the beginning, soon becomes slower, labored, and more and more superficial, until it dies out almost imperceptibly. The pupils, somewhat contracted, react up to the last moment. Slight convulsions, which we are accustomed to see in asphyxia, sometimes occur shortly before death. Absorption is exceedingly rapid; already after thirty seconds a distinct areola is visible around the bite. Death occurs at the latest within fifteen hours, in thirty-two per cent. in the first three hours. When the patients do not die of paralysis, they recover remarkably quickly and without later consequences. The autopsy reveals no changes in the skin at the point of injection; the subcutaneous tissue, however, is thickly infiltrated with reddish serum; the surrounding blood vessels are congested. All the internal organs are hyperæmic, and the bronchi are filled with frothy mucus and perhaps with fluids which have been forced into the patient's throat. The blood is mostly liquid and dark.

After the bite of a rattlesnake the local disturbance is most pronounced: violent pains at the bleeding wound, hemorrhagic discoloration of its surroundings, and later also of more distant parts; bloody exudations on all the mucus membranes, nose, mouth, conjunctiva, and hæmaturia, or rather hæmoglobinuria. Usually somewhat later than after cobra poison-

ing, but possibly within fifteen minutes, constitutional symptoms may develop, great prostration with nausea and vomiting. A continuous fall of blood pressure is noticed. Respiration, in the beginning accelerated, grows slow and stertorous. After a temporary increase of reflexes, which in susceptible animals and after large doses may rise to convulsions, opisthotonos, and tetanus, paresis supervenes, with paraplegia of the lower extremities, which progresses in an upward direction, ending in complete paralysis. Albuminuria appears after about six hours. In such a condition death may come inside of twelve hours. If the patient recovers from the paralysis, a septic fever may develop in consequence of the enormous and multiple hemorrhages, to which he may succumb after a lapse of time. Eventual recovery sets in very suddenly, even in the most desperate cases. Not rarely, however, suppurating wounds remain, which granulate poorly, break open repeatedly, and may lead later on to deep necrosis, even of the bones.* The autopsy shows a deep bloody infiltration at the bite, down into the necrotic muscles, hemorrhages of distant muscles, particularly of the intercostals: all serous membranes, chiefly the endocardium and the peritoneum, are completely covered by ecchymoses of all sizes; the lungs show subpleural ecchymoses and infractions; the kidneys are hemorrhagic in the glomeruli and pelvis, and there is cloudy swelling of the epithelium of the canaliculi. Hemorrhages have been observed also in the serosa and in the substance of the central nervous system. The blood is fluid, and does not clot, even after a long time.

It may be considered as firmly established that snake venoms affect the motor ganglia of the anterior horns and chiefly the medulla oblongata. There exist records of few accurate microscopic examinations of all organs after snake poisoning. In general they resemble the changes which we are wont to find in all kinds of poisoning of whatever origin, especially by the toxins of zymotic diseases, e.g., fatty degeneration of the liver with inflammation of the bile ducts, acute parenchymatous nephritis, disseminated pneumonic patches, etc. Of the pathological changes in the central nervous organs, which, to judge from the symptoms, we may expect to find, no reliable records have been published. I am glad to say, therefore, that several gentlemen of this city have been working up some cases of snake poisoning, and they will give us later an analysis of their investigations. In the mean time, I may be permitted to state the substance of the results as a pronounced affection of the ganglion cells throughout the central nervous system, especially in the medulla; the chromatic structure and cyto-reticulum have almost disappeared, as well as the dendrites; the nucleus and nucleolus are not affected.

* It is remarkable that in some cases a periodical relapse of inflammation and suppuration of the old cicatrices is reported almost at the same time every year. Leon Stejneger, in The Poisonous Snakes of North America, p. 353, relates the case of the draughtsman of the Smithsonian Institution. After a bite of a coral snake, swelling and inflammation of a finger with loss of the nail are said to have recurred in ten successive years almost to the date of the bite. A cure was finally effected by means of the herb Micania guacho.

The question, then, whether snake venom is a nerve or blood poison seems to be definitely settled ; it is both. We have, however, in this connection to consider separately some remarkable phenomena in the blood and circulation. In like manner the multiple hemorrhages might point to a disturbance of the vasomotor center, and some investigators ascribe them to an enormously increased diapedesis. Fresh poison added to blood in a test tube or administered hypodermically causes the blood corpuscles to swell and allows the hæmoglobin to escape into the plasma. The hæmoglobin itself is not changed, the spectrum remaining normal. Local application of poison to a capillary area incites a vigorous diapedesis, as some consider it, while others think it to be a real rupture of the capillary walls. The blood cells escape and are destroyed to such an extent that a few hours after the injection of poison but one-half of the normal blood corpuscles are counted. Finally, however—and this point has been creating a most lively discussion—the coagulability of the blood is materially influenced. Formerly it was an accepted dogma that cobra venom increased and viper venom inhibited clotting ; recently, however, the investigations of Heidenschild, and more so the careful experiments of Martin, of Sydney, have cleared up the matter. It is true that viper venom has a more pronounced influence upon the circulation, yet the doses and the mode and the rapidity of introduction are matters of the greatest importance. As a rule coagulation is inhibited for a long period. A small dose injected intravenously causes a positive phase of coagulability of two or three minutes, which is followed by a negative phase of longer duration. A second larger injection brings on the same positive and a much longer negative phase. A third still larger injection, which is borne remarkably well, destroyes coagulability for a long period. At the same time the leucocytes disappear almost entirely from the circulating blood ; they are massed in the liver, lungs, and bone marrow, and reappear only when the blood regains its coagulability (or perhaps inversely). A hypodermic injection, and therefore the majority of all snake bites, acts in the same way as a small intravenous injection. Immediate introduction of a larger quantity of poison into a blood-vessel may cause a sudden complete clotting of the whole mass of blood, with the exception of that in the pulmonary veins and the left heart. Many contradictory reports of the blood pressure, sudden stoppage of respiration, etc., are explained by the sudden massive thrombosis. The immediate cause of coagulation is probably a nucleo-ablumin, analogous to the fibrinogenic substance of Wooldridge, also a nucleo-albumin. It is not performed in the venom, but, as Martin has it, is liberated instantaneously by the action of the poison from the stroma of the destroyed erythrocytes and the endothelium of the blood-vessels, and it brings on extensive thrombosis at one stroke.

Another important effect of snake venom is the loss of the germicidal property of the blood plasma. It is well known that most normal blood serum destroys micro-organisms, or at least retards their growth. Ewing of Washington, was the first to show in 1894 that this faculty was annihilated

in the blood of animals killed by crotalus poison, and Martin has confirmed it for the venom of the Australian black snake. This explains both the well-known rapid putrefaction of the poisoned organs and the danger of subsequent decomposition of the extravasated blood and the resulting sepsis during convalescence. We can create a closer similarity of the two types of poison in an artificial way. Viper venom, when heated to 80° C., loses its intense action upon the circulation and approaches cobra venom in character. The Australian snakes occupy in this regard an intermediate position, for besides a prominent cobra effect that produce moderate hemorrhage and always hæmoglobinuria. Persons poisoned by the East Indian Bungarus exhibit sometimes a peculiar course of disease. Some cases cannot be distinguished from cobra poisoning, yet in others a certain chronicity of symptoms is seen, which can be compared only to the incubation period of infectious diseases. From two to six days may have elapsed after the bite without any symptoms, when unexpectedly a general debility sets in, with albuminuria and a sanious discharge from the eyes, nose, and rectum. The patient invariably succumbs within a short time. A disproportionate swelling is to be noted in poisoning by the European viper; it sometimes extends over the whole body. The poison of the African viper, the puff-adder, acts in a stupefying manner from the very beginning; the animal stricken stands without motion or reaction, as if the whole cerebral cortex was eliminated; complete sensory and motor paraplegia ascends gradually with sharply defined limits. In briefly summarizing the mode of dying from snake poison we might say: Death occurring within a few minutes is due to general thrombosis; a patient who dies within twenty-four hours may succumb in the first hours to paralysis of the respiratory center, later to general paralysis, lethal exitus later than this time, days or even weeks after the bite, may be the result of sepsis.

The object of treatment is fourfold: first, to prevent absorption of the poison; second, to destroy or neutralize it; third, to accelerate its elimination; fourth, to treat symptoms of imminent danger. If the wounded limb, e.g., a finger, cannot be amputated quickly, at least the circulation should be checked or retarded by a ligature as practised since time immemorial. A ligature is applied as tight as possible, not only at one, but at two or three places; e.g., when a finger has been bitten, round the finger itself, at the wrist, and at the elbow. The experienced Wall is so convinced of the advantages of Esmarch's bandage that he not only recommends every physician in India to have one in readiness, but wants to see it in every well-regulated household. The ligature is relaxed at intervals of some hours to prevent gangrene, but is applied again as soon as practicable.

It has been an often-recommended custom to suck the wound with the lips or to apply cups. The result of such a measure is at least doubtful, because of the finely punctured bites; the sucking ought to be preceded by a long scarification into the deeper tissues. It is still safer to excise a large area of these tissues or destroy them with the actual cautery. Wall, taught

by long experience, recommends proceeding in the most ruthless manner. By these means the absorption of poison can be limited to a possible minimum, so that the system shall gain time to overcome the whole quantity at intervals. How reliable a good ligature may be is demonstrated by a case reported, in which the effect of a fatal dose was arrested for sixteen hours, but after the ligature was loosened, death occurred within two hours.*

The next question is: Are we able to render innocuous the poison in the tissues surrounding the bite? This leads us to a whole series of specifics, which owe their reputation partly to old traditions, partly to experiments in the test tube. The majority of these specifics, which, it is true, neutralize the poison in vitro after a shorter or longer period (carbolic acid, e.g., only after twenty-four hours), destroy all tissues to such an extent that it seems preferable to apply the cautery. Even the much praised permanganate of potassium, recommended especially by Lacerda of Rio, has not fulfilled the high expectations, for neither locally applied in a one per cent. solution nor injected intravenously has it the elective faculty to single out snake venom for oxidation in presence of other proteids. One per cent. of chromic acid has gained somewhat of a reputation; it does not destroy the tissues simultaneously with the poison, but it merely makes them shrink. Calmette has frequently tested hypochlorite of lime in a solution of 1 : 60; he found both its local and repeated hypodermic application as well as its internal administration of good effect; not less so a one per cent. solution of chloride of gold as a local remedy.

Ammonia, extensively used internally and externally, is nothing but a stimulant. Feoktistow actually advises against it, because he thinks he has seen after its use increasing hemorrhages caused by higher blood pressure. Neither has alcohol any local effect as a coagulating medium; it is to be rated also as a mere stimulant. It has always met with appreciation on the part of the real or, more so, of the alleged victim. Indeed, the use of this infallible specific has often been carried to such an extent that it was impossible to decide whether the patient succumbed to snake venom or to an acute alcoholism. It is, moreover, a fact that intoxicated persons, when bitten in this state, have not proved to be better protected against snake bites than sober people; and the enormous doses which we often hear of as having been administered deserve nothing but condemnation.

If, then, the chances of neutralizing the poison in loco are limited, we may ask if we can hasten the excretion of the injurious substance. The kidneys are attacked to a greater or lesser degree by the poison, especially that of vipers; hence, it is doubtful whether we should be permitted to increase their activity. The vicarious excretion by perspiration, stimulated by diaphoretics, has also had dubious results. It has been demonstrated, however, that part of the poison is excreted by the stomach. Alt, of Munich, found that alkaloids, chiefly morphine, after hypodermic use were excreted by the stomach almost to one-half of their amount. When he tried the same method for snake venom, it was discovered that the animals

* WeirMitchell: Smithsonian Contribution, 1861, p. 3.

whose stomachs were washed out were saved, whereas the controls died; at the same time the washed-out fluid was again poisonous to other animals. Hence it is probable that the use of the stomach pump may be of good service. Those of you who have read a minute description of or have personally witnessed the snake dance of the Moki and Zuni Indians of Arizona, will remember that after the performance the dancers who are sometimes bitten by the snakes receive a potion prepared by the priests, which contains an emetic. Then the whole crowd stand around a certain part of the parapet to empty their stomachs freely. This custom has undoubtedly been sanctioned by long experience.

Finally, to settle upon a definite method of rational treatment, it will be necessary to proceed in a regular clinical way, in order to find the proper indications for therapy. What are the prominent morbid changes which threaten life? Are they irremediable or are they transient? That they are not irremediable is proved by the many individuals who survive a snake bite in spite of the gravest symptoms. We have seen that the poison exerts, first, a hæmolytic action; second, a destructive influence upon the cells of the medulla. We know at present of no pharmaceutical remedy which will arrest either the escape of the hæmoglobin into the plasma or the rupture of the capillaries. The effective remedy which we now possess will be spoken of in conjunction with the other groups of symptoms to which we proceed directly. These symptoms we have found to be due to the toxic action upon the central nervous system. The changes in the ganglion cells, the dissemination and disappearance of the Nissi granules, whatever this may mean, must be fully reparable, since, as we have seen, rehabilitation takes place rather suddenly. If we are not able, therefore, to re-establish their function immediately, could we not at least tide over the dangerous period of deep depression? One method suggests itself to a medical mind, i.e., artificial respiration. The heart-beat ceases several minutes later than respiration, and in one experiment Fayrer succeeded in keeping up the circulation for eight hours longer by artificial respiration. Fayrer and Lauder Brunton strenuously recommend that it be continued not only for hours, but for days, with or without a tracheal canula. This advice seems to have fallen somewhat into oblivion especially since Martin claims that in poisoning by Australian snakes he saw no good results from artificial respiration, death occuring in spite of it in fifteen minutes after the heart stopped. Notwithstanding some failures, we are justified in trying it for an extended time, always keeping in mind that an abrupt change may set in in the most desperate cases.

In this connection we have to consider a remedy which even recently has been praised with certain persistency as a specific; I mean strychnine. First used by Pringle in Australia, it was tested in India, and in spite of the little encouraging reports was enthusiastically championed by Dr. Muller, of Sydney. He declared the failures were due to insufficient doses, and he began with a dose of at least 0·01 gm., repeated several times until slight tetanic symptoms appeared.*

Many cases in Australia have been treated with strychnine, and upon the advice of the government, Indian surgeons have also used it quite extensively. Nevertheless, the results are not so convincing that we could rely upon this drug as a specific. The experiments of Kanthack and Feoktistow were negative; interesting, however, is the latter's positive experiment that artificial tetanus brought on by strychnine was arrested by snake

* The tolerance toward strychnine seems to be quite extraordinary in these cases: thus gr. 3-5th was used in the case of a boy thirteen years of age within three and three-quarter hours, gr. 4-5th in five and one-half hours, gr. 4-5th in four and one-half hours, gr. 1 and 1-10th in seven hours, gr. 4 in six days.

venom. Roux * states that tetanus antitoxin has a certain influence upon snake poison, but not inversely. Atropine has been recommended as a stimulant for the respiratory center. I do not find many instances of its use recorded, but fail to see why it should not be resorted to as well as strychnine.

A few years ago Calmette, and almost simultaneously Fraser, of Edinburgh, surprised both the scientific and the lay world with an anti-venomous serum. It is to serum therapy and immunization, as we shall presently see, that we have to look for the successful treatment of snake bites.

The idea of immunization is by no means a modern one. Even in antiquity we hear of it, and among savage tribes of ancient and modern times, wherever poisonous snakes abound, attempts at protection, against snake venom are made under various forms, semetimes connected with mystic ceremonies.

Sewall, of Ann Arbor, Mich., was the first to introduce methodical inoculation of snake venom with the idea of immunization. His experiments, in which, by gradually increased doses, he made his pigeons secure against seven times the lethal dose of massasauga poison, were published in 1887. Calmette, Director of the Pasteur Institute of Lille, France, after a series of failures succeeded in securing immunity and at the same time in elaborating a protective serum, antivenene, which, spite of some weighty opposition, must be considered to-day as the only reliable antidote to the deadly action of snake poison. Calmette manufactures antivenene by inoculating with cobra venom or with a mixture of cobra, crotalus, viper, and hoplocephalus venoms, in both of which the hæmolytic agent has first been eliminated by heating to 80° C. The inoculation of horses has been carried on for three successive years. Antivenene acts as a full protective in a dose of from 5 to 20 c. c., when injected even one and one-half hours after the introduction of venom. A number of reports from different parts of the world attest the curative power of Calmette's antivenene. It has been used with beneficial effect in East India, in Egypt, Africa, and in the West Indies against the different serpents of those countries. Fraser, who worked independently of Calmette for six years on the same subject, does not agree on all points with Calmette; in fact, the latter's statements have not been thoroughly confirmed by the Indian physicians and by Martin, of Sydney.

Phisalix, of Paris, while experimenting exclusively with viper venom, has found many substances which exhibit a decided antitoxic action. First, he discovered in the blood serum of eels a substance which, according to Mosso's researches, has a similar effect to that of snake venom, only that larger doses are required, and in the poison of the Japanese salamander ingredients which serve to immunize against viper venom. Still more surprising was the similar action of cholesterin, separated from biliary calculi and from carrots, or that of tyrosin, separated from bulbs of the well-known dahlia and also from mushrooms. All these bodies, partly of vegetable origin, had a decided immunizing effect against viper venom, and the blood serum of animals into which these substances had been injected had an exactly similar effect. Very likely we have to add to these many vegetable remedies which have had more or less established reputation as snake cures, as, e. g., the before-mentioned Micania guacho. All these substances, however, are capable of raising the resisting power of the organism but little above the minimal lethal dose of venom: they have no effect whatever when injected simultaneously with the poison, but if introduced at least twenty-four hours previously they create an immunity of some duration. It must be noted that all these substances are the highest final products of proteid metabolism. I must not forget to mention the similar

* Annales Pasteur, 1894.

antitoxic influence of the suprarenal glands, the administration of which is a therapeutic measure recently come into prominence; their cortical substance seems to be more efficacious, and it may be of interest to know that the guinea-pig, which is the animal most susceptible to snake venom, has almost no suprarenal cortex.* It is to be hoped that the action of these proteid substances may lead us to a definite solution of the relation between toxin and antitoxin; and snake poisons, as Martin points out, are particularly well adapted for these investigations. They have the great advantage of being less sensitive than other toxins to light and heat, and of being comparatively easy to obtain in a form which preserves a remarkably constant composition.

To sum up, then, the most commendable treatment would be:

One or several tight ligatures should be made above the wound, followed perhaps by deep scarifications; then injection of antivenene, if at hand. If the latter cannot be had, injections should be made of a solution of hypochlorite of lime, 1 to 60, at several points near the bite and elsewhere. Stimulation, if necessary, by either strychnine or atropine or alcohol; hypodermoclysis of physiological saline solution; lavage of the stomach; artificial respiration for hours; and, not least of all, continuous encouragement of the victim, for a deep mental prostration goes together with the physical depression of the nervous centers.—*Scientific American Supplement*, November 3 &10, 1900.

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HAHNEMANN AT THE CLOSE OF THE NINETEENTH CENTURY; OR THE TRIUMPH OF TRUTH.

II.

It is worthy of note, in connection with the Hahnemann monument in the United States, that the largest contributor to the monument fund was a Lady homœopathic doctor, Dr. Nancy T. Williams, of Augusta, Maine, who made the magnificent donation of 4,510 dollars.

INAUGURATION OF THE MONUMENT OVER HAHNEMANN'S TOMB IN PARIS.

Exactly a month after the dedication of the Hahnemann monument in the Capital of the United States, took place the inauguration of the Tomb of Hahnemann in the capital of France.

On Saturday, the 21st July, most of the members of the International Homœopathic Congress thronged round the monument. They were joined by a large number of the adherents of Homœopathy. In the presence of this distinguished audience Dr. Cartier, Secretary to the Monument Committee, Dr. Brasol, President of the Committee, and Dr. Léon Simon, (who took the place of Dr. P. Jousset, unavoidably absent from indisposition), delivered the following discourses:

Dr. Cartier said :

Gentlemen,

Hahenmann is there ! If any of you are inclined for an instant to criticise the monument, remember there is something before you more precious than the finest granite, more grand than this vast site, richer by far than the most exquisite sculpture. Under this monument reposes the body of our venerated master.

The difficulties we had to overcome have rendered this tomb more precious still. Twelve long months passed away before we could obtain the authorisation to act from the parties concerned, and when we were authorised to act, it was necessary to search, in this renowned cemetery of Père-Lachaise, a place worthy of the founder of Homœopathy. I do not hesitate to say that the place where Hahnemann reposes, in the historic centre of Père-Lachaise, at the intersection of three roads, in the midst of a scenery of charming verdure, is a veritable God-send.

The international subscription has come up to 19,000 frs., but of this sum it was necessary to deduct numerous charges that we had to meet, such as those for the purchase of a very costly supplementary piece of land, for the right of the exhumation and inhumation of the body, for advertisements, for loss of exchange in regard to foreign money, for marble cutters, diverse charges of the general secretary, &c., &c. So that you see that the actual cost of the monument has come up to 16,400 frs.

The bronze bust has been offered by the Hospital of Saint-Jacques. It is only a few days ago that M. Cloquemin, friend and counsel of the late Madame Baroness de Bœnninghausen, informed me that the lady had made the gift of the bust of Hahnemann, the original bust in marble of the sculptor, David d'Angers, for the tomb in Père-Lachaise. The bronze bust has been already placed. Numerous difficulties having sprung up, and there being the possibility of marble deteriorating more rapidly than bronze in the open air, the Committee have decided to keep the bust in bronze. The original bust by David d'Angers remains, therefore, in the hands of Mr. Cloquemin.

In this matter, we had the extreme good fortune of being powerfully helped from the pecuniary point of view by several zealous persons. Our devoted President, Dr. de Brasol, with Madame de Brasol, has had the ingenious idea of giving a pay-

ing musical soirèe, the proceeds of which were destined for this tomb. Almost all the homœopathic societies have sent in their contributions; out of our own country, I should mention firstly the Russian Societies, then the Homœopathic Medical Academy of Barcelona, the Belgian Society, the physicians and pharmaceutists of Germany, thanks to the co-operation of Dr. Mossa and of his journal the *Allgemeine Zeitschrift fur Homœopathy*, the Homœopathic Association of Leipzig, the Homœopathic Societies of Mexico, of Colombia, of Holland, of Italy, of Denmark, and last of all some of the Homœopathic Societies of the United States.

We have equally to thank the editors of Homœopathic journals who have raised particuliar subscriptions through their papers, M. Trichon in the *Annales Homœopathiques*, Dr. Clarke in the *Homœopathic World*, Dr. Kraft in the *American Homœopathist*, the Pharmacie Costa of Lisbon, &c.

We should make special mention of two generous subscribers as examples of spontaneous generosity: Dr. Walter P. Wesselhœft, of Boston, who has sent 100 dollars, and Dr. Miguel Velasca, of Guatemala, who has sent 1350 frs., collected with the co-operation of his patients and friends.

I conclude, Gentlemen, with expressing our regret in not seeing in our midst, Dr. Bushrod James, of Philadelphia, to whom our sincere thanks are due for the efforts he made in his country in securing subscriptions for us, at the time when grateful America was erecting a monument to Hahnemann, in the capital of the United States, at a cost of 300,000 frs.

Dr. Brasol said:

Ladies and Gentlemen,

Our last International Congress, held in London, in the year 1896, which coincided with the centenary of Homœopathy, decided to celebrate an event so conspicuous as the centenary of one of the most important reforms in the art of cure by the erection of a monument over the tomb of the founder of Homœopathy. In order to give effect to this decision of Congress, an international Executive Committee was appointed, an account of whose operations has been read to you by its Secretary. As President of the Committee I have the honor to-day to tell you that our task is finished. The debt of honor and of profound

veneration for our master has been well discharged; and on this new tomb an excellent monument has been erected by his grateful disciples in commemoration of the centenary of the existence of his doctrine. As you have heard, all the countries of the world have taken part in the project of immortalizing the memory of Hahnemann, and the erection of this mausoleum is really an international work.

Gentlemen, Hahnemann died in 1843, his earthly body has been destroyed, the fragile remains of the great reformer of medical science have not been able to resist the all-powerful action of Time. But the part of his being which survives his mortal remains will not perish. This is incarnated in his doctrine, which has actually spread throughout the whole world, and the spirit of the school founded by him lives in his disciples. The proof has been found in the brilliant Congress that has come to take place. Thus the fruits of the medical genius of Hahnemann are not subject to death. They are imperishable as the truth upon which was founded his teaching. Hahnemann has by his powerful arm shaken to the foundation the complicated edifice of medicine of the middle ages. He has definitely reversed the idea of taking for the basis of scientific medicine conjectural hypotheses on the interior essence or the intimate cause of diseases. He has given us in exchange a simple and clear rule, based upon experience, in order to find out the remedy or specific remedy for each individual case of disease; at the same time he has established the principle of pure experimentation of medicaments on healthy man in order to discover their specific virtues, and this principle gives the key to the scientific reform and perfecting of the materia medica. The grand reform of Hahnemann consists then in the creation of a positive, non-dogmatic therapeutics, freed from all arbitrariness and influence of fashion, but responding only to facts and laws. The facts are the phenomena or the real manifestations of natural diseases recognized by the agency of our senses armed with all the methods of investigation of diagnostic and pharmacology. The law is the correlation which ought to exist between the phenomena of the disease and the phenomena of the physiological action of the medicament, in order that the last may cure the first. Hahnemann has found that this correlation ought to be

that of reciprocity or *similitude,* in other words, the medicament, in order to cure the disease, ought to be homœopathic. He has told us: Search and give to the patient the medicine, which in healthy man, causes a similar disease to his, and the patient will be cured. Since then this method has been verified and confirmed an infinite number of times, and the result from it has always been the cure or the relief of the patient. But the fact of uniform results following under uniform conditions is the characteristic of a law of nature. It is thus that the initial rule of experience proposed by Hahnemann for the treatment of diseases, *Similia Similibus Curentur,* which you are going to engrave here in ineffaceable characters for all time, has acquired the force of law. And it is by the scientific establishment of this law that Hahnemann has acquired for himself immortality.

What is really the discovery which, by its importance, can surpass that which has for its object the relief of our bodily miseries? What earthly glory can equal that of the discovery of the law of cure? And what infinite gratitude do we not owe to the great master who has given his disciples a weapon so powerful and so victorious in combating human suffering? How then are we to express that gratitude? Without fear of contradiction I should say, that we can do so by fulfilling the moral duty of perfecting the science founded by the master, not by conforming to the dead letter of his word, but by cultivating the positive field of his doctrine and by enriching our materia medica. Let each of us, according to his ability, his aptitudes, and his calling, bear his share of the work, and the day will not be long to come when the grand discovery of Hahnemann will become the property, not only of a small minority, but of the great majority of the great body of the medical profession throughout the world.

How the truth triumphs! How the light of the law of similars shines so that all those who have eyes may see! And that the name of Hahnemann may be engraved in the history of medical science and in the hearts of his grateful followers!

(The monument was now unveiled.)

The International Committee has the honor to transfer this international work to the Société Française d'Homœopathie with the perfect confidence that the Society will bring to the

preservation of this fine monument as much care as it has displayed its zeal in the propagation and development of the doctrine of the founder of Homœopathy.

Dr. Leon Simon said:

Ladies and Gentlemen,

In the best arranged functions there often happen accidents which no human will can prevent. It is thus that an indisposition, temporary I hope, of Dr. P. Jousset, President of the Congress and of the Société Française d'Homœopathie, has deprived us to-day of his eloquent words. It happens that he who unexpectedly holds his place, without replacing him, is the same who, by favour of your suffrages presided for two years over the Société Française d'Homœopathie from the moment of the transfer of the remains of our Master Hahnemann. Therefore, it is with affectionate respect I salute him who favored my grandfather with his friendship and who saw the beginning of my father's career. Before this tomb under which he reposes, before this monument as well conceived as executed, we all feel how we owe our gratitude to the Committee who have achieved this success, and in your name I offer them our cordial thanks. Drs. Brasol, Cartier, Richard Hughes, and Bushrod James have deserved well of Homœopathy.

Henceforth visitors will come from all parts of the globe and pass this tomb. What will she say to them? To those who come from countries more or less distant, she will say: Courage! you are welcome. To us, Frenchmen, who receive this sacred trust and who take the responsibility of its preservation, she will say one word, but an imperative word, which we ought to consider as a command,—she will say: Remember!

FIRST EXPERIENCE OF GOLD AS A REMEDY IN DISEASE.

By W. Younan, M.B., C.M. (Edin.)

Years ago when I first commenced my study of homœopathic literature I was interested in the writings of Dr. James Compton Burnett, of London. My attention was much arrested by a very pretty monograph of his entitled "Gold as a Remedy in Disease," and after its perusal I had no hesitation in believing that the founder of the homœopathic school of medicine did very wisely in rescuing this famous drug of the ancients from unmerited oblivion. In the East Gold has been a medicine from time immemorial, and yet the medical systems of the West looked upon it till very recently as an inert substance. I did not remember having ever been taught in my college days that Gold was a remedial substance, and within the last 15 or 20 years only did allopathic pharmacy announce the possession of a compound Chloride of Gold and Sodium.*

I was very struck, on reading Dr. Burnett's monograph on Gold, with the extensive medicinal applications of the metal, and one suggestion of the writer made a lasting impression on my mind. The suggestion was to the effect that Gold had a marked action upon the testicles, and, if given as a medicine to weakly, puny, sexually undeveloped boys, it would induce the normal

* Though it is true, as Dr. Younan says, scarcely anything is said in their lectures by Professors of Materia Medica on Gold, writers on Materia Medica are not all of them silent about its medicinal virtues. The encyclopædic Pereira thus (1854) speaks of the metal: "Gold, like other metals, has been frequently supposed to be inert while it retains its metallic condition, but in this, as well as in some other instances, the accuracy of the assumption has been denied. Both Chrestien and Niel, as well as other writers, assert that finely divided metallic gold (*pulvis auri*) produces the same constitutional effects as those caused by the various preparations of this metal, but in a milder degree, while it excites little or no irritation. It is said to promote the secretions of the skin, kidneys, and salivary glands. It has been used as an antivenereal and antiscrofulous remedy by Chrestien, Niel and others, with considerable success. It is said to be preferable to the other preparations of this metal in delicate and nervous subjects."

Dr. Pereira speaks also of the physiological effects and medicinal uses of the chemical preparations of Gold, such as the teroxide, the terchloride, the iodide, the sodii auro-terchloride, the auri tercyanide, from which it will be seen that the compound chloride of gold and sodium is not quite a recent preparation, though, as Dr. Younan says, it has come recently into vogue.—Editor, *Cal. J. Med.*

condition of health and virility. I had under my care at the time a family in which the youngest boy, twelve years of age, was more like a girl in his disposition and physical constitution. One day the mother took me into her confidence and gave me to understand that the boy "was not made like other boys," and she would be pleased if I examined him.

On examination I noticed that the sexual development for a boy of his age was very retarded, and to my surprise I discovered that both testicles were undescended and no trace of them could be found in the abdominal rings either. I considered this case a suitable one for Gold, and I was desirous of putting to the test some of the wonderful things I had read in the literature of the Homœopathic school. Accordingly I called at one of the leading pharmacies in town and asked to have prepared a one per cent. solution of the Chloride of Gold and Sodium.

A prescription was dispensed as follows:

R. Auri et Sodii chloridi (1% solution) ℥xii
Aquæ destillatæ ad ʒvi
M. Sig. 12 marks

One mark morning and evening. Two phials of the above were used and I waited to see the result. I had not to wait long however; for to my surprise and satisfaction I found on examination that one of the testicles had already descended into the scrotum. It was not a little surprising to watch the gradual effect of the Gold upon the boy. His girlish voice and manner began to change for those of a boy, and, from being very shy in the company of children of the opposite sex, he was beginning to be attracted by them. His mother and I would often have a quiet smile at the change that had come over the boy, and one day, when we thought master——had become sufficiently changed, I made another examination and was pleased to inform the mother that the other testicle had also descended into the scrotum. Master—— was now a well-developed boy. Out-door games and exercises claimed a fair share of his attention and he was sent to a public school. I watched him year after year when he returned home for his holidays and I felt a pleasure and pride at his growth and development. He is now a strong, well-built young man and is doing well in life. A few years ago he married and is living happily. I wonder if he thinks of fifteen years ago as

often as I do. Gold was of very different use to him then from what it is now. Since the above experience with this noble metal as a remedy I have used Gold pretty often in my practice, not in the above dosage, however, nor anything approaching to it, but in the infinitesimal dose that Hahnemann recommended. Need I say I have always found the master correct in this important particular. For, next to the right selection of the remedy he strongly advocated the smallest infinitesimal dose. It is a great pity that so much divergence of opinion prevails on the dose question in Homœopathy. So many homœopathic physicians are timid in trusting to Hahnemann's posology that its observance is not the rule but the exception. My faith in the master's teaching grows with my experience of his wonderful Therapeutics from year to year, and I would fain wish that all his disciples sat as humbly at his feet as I have always tried to do. Reverence for the greatest medical teacher of the age is a sentiment that no homœopathic physician should neglect to cultivate. The truth is as sacred in science as it is in religion.

[We shall be glad to receive Dr. Younan's subsequent experiences with Gold as a remedy, especially as in the case reported it was used in massive doses. We are curious to know if he has treated cases similar to the very interesting one he has narrated above with infinitesimal doses and with the same success. We know full well from an experience extending to nearly forty years that these doses do act and act most marvellously. But we know also from the same experience that they sometimes fail, and then the so-called massive or as we should rather call appreciable doses, substituted for them, as marvellously succeed. When massive doses do succeed in removing diseased conditions permanently without producing the slightest aggravation, the question naturally arises, whether infinitesimal doses would have acted equally well or at all in these cases ?

We can assure our readers, as they must have seen from what we have been writing even since our conversion, that we yield to none in our "reverence for the greatest medical teacher of the age." But we must at the same time declare that our reverence for Hahnemann, as indeed for any finite, mortal man, is always subordinate to our reverence for Truth. Indeed our reverence

for any man is in proportion more to the reverence that man had displayed for Truth, as manifested in his zeal and ardor and enthusiasm in its pursuit, in the sacrifices that he has made for its sake, than to the amount of success that he has achieved in that pursuit and by those sacrifices. Our reverence for Hahnemann is based upon all these circumstances combined. At the same time it would be surrendering our reason and our conscience if we were to say, as some of his followers would have us believe, that he was infallible, that all that he has taught is absolute truth, from which there can be and ought to be no deviation.

With reference to the infinitesimal dose we have times without number given it as our strong conviction that this is the most original and the greatest of Hahnemann's discoveries; and we have gone so far as to say that without it Homœopathy could never have been established, as even a brief experience would have shown it to be the most mischievous medical doctrine ever broached. Nevertheless we have given indubitable proofs to show that massive doses are not to be ignored. We have reasons to go further and say that Hahnemann's adhesion to infinitesimal doses and to a particular dose alone as the best, was a mistake, and the greatest that he has committed. It has been a misfortune and a disaster to homœopathy, as it has been the most fertile cause of disunion and dissensions among his followers, than which there can be nothing more unseemly. The dose must be left an open question. No rule for its determination has been discovered, nor we believe will be for some time to come. —Ed., *Cal. J. Med.*]

PUNSAVANA;
OR THE CAUSING THE BIRTH OF A MALE CHILD.

BY DR. SURENDRA NATH GOSWAMI, B.A., L.M.S.,

(Continued from Vol. xix, No. 3, p. 104.)

of this question by admitting, in the human system, the presence of a cyclical form of tissue-activity, (19) by means of which the uterine bloodvessels, being deprived of their mucous coating, in a fixed time, begin to ooze out blood, either of their own accord, or under the influence of a kind of rythmical change in their governing centres. (20)

CHAPTER III.

CONCEPTION AND GENERATION.

Immediately after coitus, the semen is carried upwards into the uterus, partly by the inherent motion of the spermatozoa (21)

19. रसाद्रक्तं ततो मांसं मांसान्मेदः प्रजायते
मेदसोऽस्थि ततो मज्जा मज्ञः शुक्रस्य सम्भवः। सुश्रुतः
केचिदाहुरहोरात्रात् षड्भादपरे परे।
मासेन याति शुक्रत्वमन्नं पाकक्रमादिभिः॥
सन्ततं भोज्यधातूनां परिवृत्तिस्तु चक्रवत्। वागभटः

20. स (अन्नपानरसः) खलु त्रीणि त्रीणि कलासहस्राणि पञ्चदश च कलाएकैकस्मिन् धाताववतिष्ठन्ते एवं मासेन रसः शुक्रीभवति स्त्रीणाञ्चार्त्तवमिति। अष्टादश सहस्राणि सङ्ख्या ह्यस्मिन् समुच्चये कलानां नवतिः प्रोक्ता स्वतन्त्रपरतन्त्रयोः। सुश्रुतः

19. From rasa (the product of digestion) is first generated blood; from blood, muscle; from muscle, fat; from fat, bone; from bone, marrow; from marrow, semen.

Some say that food is converted into semen, passing through these successive stages of digestion (assimilation ?) in one day and night; others say in six days, while others again, in a month.

20. Food is (thus) passing into the elements of the body like the rotation of a wheel.

Rasa (derived from food and drink) exists in each element three thousand and fifteen kalas, and this becomes semen in males and menstrual products in females in a month. So in summing up this (last) takes eighteen thousand and ninety kalas altogether whether counted independently or dependently.

and partly by a kind of rythmical contraction, present in the gluteal and other adjacent muscles. (22)

There is a great difference of opinion as to the site, in which the male element of generation must mix with the female elements. The uterus is regarded as the most favorable part of the female genital organs where such union is most desirable to take place. If the congress of the two sexes happen immediately after the appearance of the menses, the chance of impregnation becomes very small, as the outflow of blood, for the first three to five days, continues in a state of great abundance and the uterine mucous membrane lies at the same time, in an actively disintegrated condition. Insemination at this stage is, therefore, often attended with failure; the semen is either carried down, or washed off, by the outward current, or if not completely dislodged, it undergoes a great wreck in its passage upwards. (23) In case it is destined to survive the heavy stress put upon it, it suffers itself to become at last united with an immature ovum either in the ovary

21. तत्संसृत्यावर्त्तमुखं याति गर्भाशयं प्रति ।
तत्र शुक्रवदायातेनार्त्तवेन युतं भवेत् ॥ सुश्रुतः

22. स्फुरद्भुजकुचश्रोणिनाभ्युरुजघनस्फिचं । वागभटः

23. नच प्रवर्त्तमाने रक्ते बीजं प्रविष्टं गुणकरं भवति यथा नद्यां प्रतिस्रोतः क्षिप्तं द्रव्यं प्रक्षिप्तं प्रतिनिवर्तते नोर्द्धं गच्छति तद्वदेव द्रष्टव्यम् ।
प्रवहत्सलिले क्षिप्तं द्रव्यं गच्छत्यधोयथा ।
तथा वहति रक्ते तु क्षिप्तं वीर्य्यमधो व्रजेत् ॥

21. That (semen) after discharge (into the vagina) proceeds into the whirlpool-like mouth of the uterus and there becomes mixed up with the product of menstruation which was coming down like the semen.

22. (And then) the arm, the breasts, the buttocks, the navel, the thighs, the mons veneris, and the sides quiver (from muscular contraction)

23. The semen which enters the out flowing (menstrual) blood, becomes inefficacious, just as when anything capable of floating thrown on a river against its current, comes back, and does not go up.

As anything thrown on flowing water goes down, so semen thrown on flowing blood goes down.

itself or somewhere in the fallopian tube. The result of this unhappy union often ends in the production of an imperfectly developed child which either dies in the womb or shortly after birth. (23*a*)

The best time for conception is, therefore, the end of the first week. The disintegrated mucous membrane, after its complete removal from the uterus, begins, now, to be replaced by a kind of inflammatory exudation, which, owing to the stimulus of pregnancy or in anticipation of it, transforms itself into a distinct lining membrane—giving slowly rise to the future decidua.

Beside these two favorable conditions of the uterus, the unimpregnated ovum finds sufficient time to pass through certain preliminary stages of development—the female pro-nucleus making its appearance. In short, the female element of generation becomes, by that time, physically quite mature. These changes occur in all ova, whether they are impregnated or not. But if the ovum is still allowed to remain in an unfertilized condition no further alteration occurs. In the human female, the ovum takes about a week or so before it can arrive at this stage of inactivity. Now, if insemination happens a little before this time the question of generation of a healthy male child becomes doubly sure. (24)

23*a*. तत्र प्रथमदिवसे ऋतुमत्यां मैथुनगमनमनायुष्यं पुंसां भवति। यश्च तत्राधीयते गर्भः स प्रसवमानो विसुच्यते। द्वितीयेऽह्येवं सूतिकाग्टहे वा। तृतीयेऽप्येवमसम्पूर्णाङ्गोऽल्पायुर्वा भवति। सुश्रुतः

24. इत्यनेन विधिना सप्तरात्रं स्थित्वा ततस्तौ सहसंवसेतामष्टरात्रं। चरकः

षोड़शदिवसे गर्भो जायते यदि सुभ्रुवः
चक्रवर्त्ती भवेद्राजा जायते नात्र संशयः। शिवगीता

23*a*. A man that has intercourse with a female on the first day of her menses becomes short-lived. The product of conception on the second day dies as soon as born or during the time the mother is confined. The same is the fate with the product of the third day, or its life becomes short or it becomes defective.

24. In the same manner having abstained for seven nights they (man and wife) should live together on the eighth night.

If conception takes place on the 16th day (of menstruation) a king of kings will be born, and there is no doubt about it.

The presence of the menstrual blood in the uterus is spoken of, in the *Sashtras*, as injurious to conception; for we have already seen why the sexual congress is discouraged until there happens a complete cessation of the bloody flux. (25)

The menstrual blood, besides offering a strong resistance to the upward passage of the sperm, causes the semen to be injuriously diluted and deprives it of its nutritive value upon the sperm. For it has been almost proved to be a fact that concentration of semen is a necessary condition for the healthy life of the sparmatozoon. When the semen is naturally very thin or becomes so, by being artificially diluted, the sparmatozoon floating in it, loses much of its vigour. After the disappearance of the menstrual blood a kind of inflammatory exudation still continues within, which, according to the opinion of a celebrated Hindu anatomist, is subjected to a kind of ebb and flow—increasing one day and diminishing the very next. This alternate ebb and flow is undoubtedly a mysterious phenomenon; but according to the Hindu Sashtras it is still a fact. We can easily prove its existence, if we do but take a little trouble to verify it, in the sphere of our own observation. (26)

The susceptibility to conception is said to diminish largely in the latter half of the menstrual interval. (27) Twelve to sixteen

25. चतुर्थादि दिवसेऽपि रजो निवृत्तौ
स्त्री पत्या सङ्गच्छेत् नतु रजोऽनिवृत्तौ—भावमिश्रः

26. तासु हि (युग्मासु) रात्रिष्वार्त्तवमल्पीभवति तदा हि (अयुग्मासु) शुक्रमल्पीभवति। अरुणदत्तः वाग्भटटीकायां या १अ १६श्लोः

27. पद्मं सङ्कोचमायाति दिनेऽतीते यथा तथा।
ऋतावतीते योनिः सा शुक्रं नातः प्रतीक्षति
ऋतुस्तु द्वादश निशाः वाग्भटः या १अः २४श्लोकः

25. The wife, on the cessation of the menstrual discharge on the fourth or subsequent days, may have intercourse with her husband, but not before the cessation.

26. The product of menstruation decreases on even nights and the semen on uneven nights.

27. As the lotus closes at the end of the day so the mouth of the uterus contracts and does not take in the semen at the cessation of the menses. The menses last twelve nights.

days are found to be the utmost limit, beyond which no conception is practicable. (28) Though insemination can freely take place and the discharge of the ovum may be effected under the influence of sexual excitement, the union of the male and female elements of generation becomes mechanically obstructed, owing to the uterine orifice getting closed up by the renewal of the decidual membrane.

CHAPTER IV.

The Anatomy and Physiology of the Fœtus.

We have already seen that the ovum, in its passage downwards into the uterus, passes through certain stages of development. In case of successful impregnation this developmental stage proceeds further on and the fertilized ovum begins to be dichotomously divided and subdivided upon itself, presenting at

28. आर्त्तवस्रावदिवसादृतुः षोड़शरात्रयः ।
गर्भ्यमृतुर्योग्यस्तु स एव समयः स्मृतः ॥ भावमिश्रः १म भागः

29. उष्मणा सहितस्वापि दारयत्यस्य मारुतः ।
ऊर्द्धं तिर्य्यगधस्ताच्च स्रोतांस्यपि यथा तथा ॥
तस्यान्तरेण नाभस्तु ज्योतिःस्थानं ध्रुवं स्मृतम् ।
तदाधमति वातस्तु देहस्तेनास्य वर्द्धते । सुश्रुतः शा ४अ ५४श्लोकः
शुक्रशोणितं गर्भाशयस्थमात्मप्रकृतिविकारसंमूर्च्छितं गर्भ
इति उच्यते तच्च चेतनावस्थानं वायुर्विभजति ।

30. अव्यक्तः प्रथमे मासि सप्ताहात् कलली भवेत् । वाग्भटः शा १अ ४२श्लोकः

28. From the day of commencement of the menstrual discharge the menstrual period lasts sixteen days. This period has been declared to be the proper time for conception.

29. The vital air combined with heat divides the fœtus and produces in it currents, upwards, sideways, and downwards.

It is positively declared that the centre of the fœtus is the seat of fire (heat). And the vital air (oxygen) fills in this seat of heat or fire and by this (process of combustion) the body of the fœtus increases (develops).

The semen and the menstrual product existing in the womb developed by changes of their natural condition is called the fœtus. This, when animated by consciousness, is divided or split up by the vital air.

30. There is no form in the first month. After seven days it becomes (कलल), a semifluid jelly-like mass.

first the appearance of a mulberry-like body (बुद्बुद्) but soon after changing into a semi-transparent gelatinous mass, assuming ultimately the appearance of a muscle-fibre. (29-33)

In this form it measures only a line in length; and if lost in abortion, it can not be distinguished from the surrounding blood clots.

31. शुक्रं रजः समायुक्तं प्रथमे मासि तद्द्रवम् ।
कललं बुद्बुदं तस्मात्ततः पेशीभवेदिदम्—शिवगीता

32. कललञ्चैकरात्रेण बुद्बुदं पञ्चमे दिने ।
शोणितं दशरात्रेण मांसपिण्डं चतुर्दशे ॥
मासैकेन तु पूर्णेन मांसपिण्डोऽङ्कुरायते
पञ्चाशद्दिवसे प्राप्ते अङ्कुराणाञ्च सम्भवः । शारीरानन्दतरङ्गिनी

33. प्रथमेऽहनि रेतस्त्र संयोगात् कललं च यत् जायते
बुद्बुदाकारं शोणितञ्च दशाहनि घनं पञ्चदशाहे खादु
विंशाहे मांसपिण्डकम् । क्षारीवसंहिता

31. The semen mixed with the menstrual product in the first month remains in the semi-fluid state and from that becomes a bubble-like substance, and from this it is transformed into the shape of a muscle-fibre.

This substance changes immediately into a bubble-like body, (mulberry-like mass) in the centre of which the embryonic area appears as a longitudinal furrow.

32. It becomes semifluid in one night; on the fifth day it turns into a bubble-like body; on the tenth night, it is converted into the character of a blood clot; on the 14th day it holds the appearance of a muscle-fibre; at the completion of a month the muscle-like-body shows differentiation of structures. On the 50th day the rudimentary organs and limbs make their appearance.

33. Another view of the question is, that in one day, the united substance turns into a semifluid body; in 10 days it becomes full of bubbles; in 15 days it increases in density; and in 20 days it assumes the structure of a muscle-fibre.

(To be continued.)

EDITOR'S NOTES.

An Unusual Symptom in Helminthiasis.

Papi *(Gazz. degli Osped.*, June 10th, 1900) records the case of a child, aged 18 months, suffering from gastro-enteritis and cough, who developed Cheyne-Stokes respiration. No cause could be detected for this in the thorax, the heart was normal, and the lungs only contained a few *râles* of bronchitic character. The child vomited ascarides, after which the respiration became rather better, but still had a Cheyne-Stokes character, until free purging and vermifuge treatment was adopted. As soon as the worms were expelled the respiration became normal. The author believes the Cheyne-Stokes phenomenon was due to some poison secreted by the ascarides.—*Brit. Med. Journ.*, Nov. 17, 1900.

Retrobulbar Hydatid.

Lavagna (*Giorn. dell. R. Accad. di Med. Torin.*, July, 1900) records the case of a child, aged $2\frac{1}{2}$, from whom a hydatid cyst situated behind the left eye was successfully removed. The child was first seen December 16th, 1898, with a history of left ptosis and exophthalmos of three months' duration. On examination a tumour was felt behind the eye; no distinct fluctuation could be detected, no pulsation, nor any inflammatory symptoms. When the right eye was bandaged the child was able to play as if it saw with both eyes. There was a slight degree of optic neuritis in the left eye. The child had been particularly fond of dogs. On December 22nd, 1898, the cyst, which proved to be a double hydatid, was successfully removed. A small rubber drainage tube was left in for twenty days. When last seen (July, 1900) the child could see quite well with the left eye, shows no trace of the operation, and no symptoms of return.—*Brit. Med. Journ.*, Nov. 17, 1900.

Iodine Parotitis.

Gron, (*Norsk. Mag. f. Laegevidensk*, lxi, 685, July, 1900) describes the case of a man, aged 26, under treatment for repeated returns of syphilitic manifestations. He developed an acute attack of parotitis upon many of the occasions on which he took iodide of potassium. Upon sixteen separate occasions he was treated with the iodide, and on eight of these parotitis followed, sometimes as the result of small doses, at other times not until large quantities had been given. On yet other occasions he took large doses without any affection of the parotid. The continued use of the iodide did not make the parotitis worse; in fact, the recovery was always complete. The only medicine which seemed to hinder the toxic action of the iodide was the bromide of potassium if given simultaneously. Only on one occasion was there any other manifestation of iodism (headache, with nasal, pharyngeal, and conjunctival catarrh). There was no albuminuria. Gron believes that the cause of the parotitis was idiosyncrasy.—*Brit. Med. Journ.*, Dec. 8, 1900.

Rupture of Splenic Aneurysm During Labour.

Aneurysm of the splenic artery is very rare. A remarkable case, reported by Mr. J. D. S. Nodes and Dr. F. Hinds of Worthing, was read by Dr. Spencer at the last meeting of the Obstetrical Society of London. The patient was 33 years old. Her fourth labour was perfectly normal and it lasted six hours; the placenta speedily followed the fœtus. Ten minutes later the nurse noticed that the patient's face became dark and a kind of convulsion set in with violent excitement. At length the patient turned pale, and she died in about a quarter of an hour. The coroner ordered a postmortem examination to be held. The peritoneal cavity was full of blood, chiefly fluid, and an aneurysm of the size of a grape was detected on the splenic artery; it had ruptured. The specimen, which was exhibited is preserved in the museum of University College, London.—*Lancet*, Nov. 17, 1900.

Cæcum Adherent to Vas Deferens.

Celos (*Bull. et Men. de la Soc. Anat. de Paris*, March, 1900) detected this condition in the body of a man, aged 75, who had died of interstitial nephritis without any signs or clinical history of appendicitis. On lifting up the cæcum at the necropsy the vas deferens was stretched till the testis was pulled upon. On further dissection the vas appeared closely united to the fundus of the cæcum by numerous adhesions, which also bound down a little white cord, the vermiform appendix greatly contracted. Its orifice was obliterated. The extremity of the appendix reached to within a third of an inch of the vas. It is not rare to find the appendix adherent to the vas; in this case the cæcum itself adhered to the seminal duct. The vas, strictly speaking, ran high in this case, so that it was not a case of the cæcum being drawn down to the vas, but just the reverse. Old perityphlitis had involved the vas, which was abnormally near the seat of disease. Dieulafoy published a case of adhesion of the appendix to the cord, manifested by fits of testicular pain, as in renal colic.—*Brit. Med. Journ.*, Nov. 17, 1900.

Extrauterine Fœtal Bones Retained Seventeen Years.

Klingensmith (*Amer. Journ. Obstet.*, September, 1900) reports the case of a patient, aged 53, who suffered from profuse diarrhœa and pricking pains during the latter half of 1896. The fæces seemed rough and sandy. In January, 1897, one cranial and one long bone were removed from the rectum; in March and August of that year more bones were extracted through the rectum. Altogether twenty-four bones came away. The patient had borne four children, one labour was a twin birth. After the third labour she became pregnant again and miscarried in 1879. A few months later she seemed to become pregnant, colicky pains set in at the tenth week, severe enough to be remembered. Fœtal movements were never strong. In August, 1880, the membranes ruptured, the amniotic fluid gradually escaping. There were no labour pains. The abdomen dimi-

nished in size and a fœtid discharge set in and continued for one year, after which time menstruation became regular again. From 1882 to 1896, when the diarrhœa set in, the patient experienced no particular inconvenience.—*Brit. Med. Journ.*, Nov. 17, 1900.

Function of the Prostate Gland.

In the October number of the *Bulletin of the Johns Hopkins Hospital* Dr. George Walker of Baltimore describes a number of experiments which have led him to the conclusion that the function of the prostate gland is to furnish a fluid in which the spermatozoa can move freely. He found that there was no movement of the spermatozoa in semen from the testicle itself or from the globus major. Semen from the globus minor and vas deferens showed slight movement where the fluid was thin, but there was no movement in the portions of thick consistence which formed the bulk of the sample. On the other hand, in a mixture of prostatic juice and semen from the substance of the testicle there was distinct but not lively motion, while semen out of the epididymis with prostatic juice showed lively motion which continued unabated for some hours. Semen from the epididymis with normal salt solution also gave lively movement in the places where a mixture had occurred. In other areas where the liquid was thick no motility was apparent. For the continued motility more is necessary than the mere thinning, for in the salt solution all movemont ceases after three hours, whereas in the prostatic juice it continues for over 20 hours.—*Lancet*, Nov. 24, 1900.

The Dissolution of Bones by Bacteria.

It is pretty certain that bacteria play an important part in the dissolution of bones, and if rapid dissolution is desired it follows that the bacteria should be afforded every opportunity of doing their work. This may have some bearing on our methods of the disposal of the dead. The action of bacteria is not likely to be facilitated by burying bodies at a comparatively considerable depth beneath the surface of the earth. Recent experiments have shown that when sifted bone-meal was inoculated with various bacteria and kept wet a remarkable resolution of the constituents of the bone, including the inorganic as well as the organic matters, took place. The organic matters resolved as might be expected, into simpler compounds of the type of ammonia, but the most remarkable result consisted in the fact that the insoluble phosphate of lime was converted into soluble phosphoric acid. The experiment was confirmed in a practical way by manuring oats grown in large pots with bone meal and inoculating with different bacteria. The yield of oats was far greater when the bone meal was inoculated in this way. Several species of bacteria were employed with widely varying results. As a rule the organic substances which act as poisons in the human body are of a very complex nature, and as they are resolved into simpler ones their toxicity diminishes and finally disappears. In the putrefactive process the organisms concerned are rapidly breaking down complex toxic substances into simpler

innocuous products. Bacteria, however, as in certain diseases, may elaborate poisons of a highly complex constitution, and thus we have two great classes of organisms from the point of view of the healthy human subject, the benevolent and the malevolent.—*Lancet*, Nov. 17, 1900.

The Sexual life and the Offspring of Epileptics.

Dr. Bourneville and Dr. Poulard have published in the *Progrès Médical* of Sept. 29th the concluding part of a series of three articles dealing with the sexual life, marriage, and descendants of an epileptic, which presents in an interesting way an epitome of the question of hereditary transmission. The case which embodies the facts is that of a young man who began to have epileptic seizures in his thirtieth year. He was possessed of great sexual vigour and he married and begat several children. The epilepsy was of the idiopathic type and ran its usual course. At present the patient is intellectually weak and suffers from loss of memory and diminished sexual power. He begat eight children, two of whom died from athrepsia while a third died from intestinal catarrh (cholera infantum). A fourth child is alive and is the subject of convulsive attacks with twitchings of the eyes (*petit mal*) and violent outbreaks of temper. Another child has epileptic seizures (*haut mal*) and suffers from hallucinations of sight and disturbances of sleep. A sixth child is very nervous and has night-terrors. Thus of eight children six are the subject of grave neurotic troubles inherited from an epileptic father. Dr. Bourneville and Dr. Poulard discuss at some length the question of the marriage of epileptics and conclude that the marriages of those who are the subjects of epilepsy (*petit mal* and *haut mal*) and epileptoid psychoses and neuroses (epileptic imbecility, epileptic insanity and hystero-epilepsy) should be forbidden or strongly discouraged.—*Lancet*, Nov. 24, 1900.

Wound of Heart successfully Treated by Suture.

Fontan (*Bull. et Mem. de la Soc. de Chir. de Paris*, May 15th, 1900) reports a case of wounding of the left ventricle and also of the left lung, in which free exposure of the injured organs and closing of the wounds by sutures resulted in complete cure. The patient was a soldier who came under the author's care in a very critical condition with six self-inflicted punctured wounds between the third and seventh ribs in the precordial region. There was a large collection of blood under the skin, and on percussion of the chest distinct signs both of pneumothorax and of hæmothorax could be made out. A large flap including the anterior portions of the fourth and two following ribs detached in front by dividing the costal cartilages, and loosened externally by section of the fourth and sixth ribs and fracture of the intermediate one, was turned outwards, and the large orifice thus made in the wall of the chest exposed the left pleural cavity containing a large quantity of blood, a superficial wound in the diaphragm, a wound of the anterior margin of the left lung, and

a third wound about 1 cm. in length in the pericardium. This last having been enlarged a penetrating wound about 12 mm. in length was exposed on the anterior wall of the left ventricle. This last wound was closed by a continuous suture of catgut, and the cavity of the pericardium irrigated with boiled water. The wound in the lung was also closed by a similar suture, and the pleural cavity washed out. The patient made a good and speedy recovery, and when discharged after an interval of two months presented no signs of any bad results from his injuries. The author in his comments on this case states that the application of the suture to the wound in the left ventricle was attended with much difficulty due to the violent and extensive movements of the heart which were caused mainly by the disordered action of the diaphragm set up by the sudden collapse of the left lung and the consequent disturbance of respiration. *Brit. med. Journ.*, Dec. 1, 1900.

Wound in Stomach Repaired by Transplanted Omentum.

Enderlen (*Deut. Zeit. f. Chirurg.*, April, 1900) has made some experiments in the interest of abdominal surgery, as not only has the omentum been sutured to a perforating gastric ulcer with success (Branns' case), but Senn has advocated transplantation of a severed piece of omentum for the repair of damage to the alimentary canal. W. H. Bennett successfully closed a large gastric ulcer by means of an omental plug. Turning to the pathology of injuries of the stomach it is noted by Enderlen that small breaches in the mucous membrane from wounds, hæmorrhages, and caustics repair well, the glandular substance being restored. Enderlen made a series of experiments on cats and dogs. Portions of the wall of the stomach were excised. The surrounding mucous membrane always prolapsed freely. The piece of omentum, already fixed to the serous coat close to the seat of excision, was now sewn around the wound, the omental tissue being fixed to the serosa as before. A process of omentum was now sewn over the whole, being united by three or four sutures. This was necessary in the case of cats, where the omentum is very thin. The abdominal wound was now closed, and the animal was kept alive for a varying extent of time. The experiments proved not only that the transplantation succeeded, but that the omental tissue gradually assumed the character of gastric mucous membrane. Well-formed glands developed. This latter result is specially important and satisfactory when we remember that the gastric mucosa is a very important organ in itself.—*Brit. Med. Journ.*, Dec. 1, 1900.

Treatment of Alopecia.

Scheffer (*Med. Mod.*, May 19th, 1900), after pointing out that the generally assigned causes of this disease are microbic and nervous, describes a mode of treatment which attempts to control the former by sublimate and the latter by pilocarpin injections. Pilocarpin is chosen from its property of sweat inducing. The sweat glands are analogous with the hair follicles, both embryologically and structurally, hence the suggestion that pilocarpin may equally stimulate the

nervous centres of hair production. It is well known that in many diseases in which the skin takes up extended excretory functions there is an increased production of soft new hair in certain regions. Additionally, pilocarpin produces a local vaso-dilatation. The alopecial patch is well cleansed with 90 per cent. alcohol, and a syringe is then filled with the two medicaments; it holds about 12 minims. The upper third is filled with HgCl solution 1 in 1,000, the second with 1 in 200 pilocarpin nitrate, and the lower third with 1 in 1000 HgCl. The needle is introduced parallel with the scalp, and just underneath the epidermis: it is then emptied, and leaves a small lentil-sized swelling. Such is repeated around the periphery of the patch, and in a circle within it, the punctures being about 1 cm. apart. An alopecial patch the size of a 5 franc piece requires about 12 punctures. The *seance* should be repeated every other day for some six or seven days. The immediate effects produced are an anæmic zone followed by a marked vascularity lasting for several hours. Five or ten minutes after the injection drops of sweat appear on the vascular zone, and this exudation continues for an hour. The secondary results (tabulated from some 60 cases extending over three years) are immediate arrest of the alopecia extension, and a gradual regrowth of hair—first light and then darker—from periphery to centre. This growth should be evident after four *seances*, but in all cases the treatment should be persistent. Its extent is indicated by the size of the bare patch, the age of the lesion, the position—temporal and occipital alopecia is always the more difficult to obtain good results—and the age of the subject. The treatment has yielded most successful results.—*Brit. Med. Journ.*, Dec. 8, 1900.

The Pathology of the Blood.

Foa and Demel (*Arch. Ital. de Biol.*, July, 1900, two papers) record the results of their preliminary investigations of normal and pathological blood stained with Ehrlich's neutral red. They claim that these throw much new light on the origin of the red corpuscles. They state that the coexistence of nucleus and granules in the erythroblasts is easily demonstrated, that the former is actually expelled in the formation of red corpuscles, but that in all probability the expulsion is preceded by an escape of many of its granules into the protoplasm, where they may be fixed by neutral red. The authors have discovered that in normal blood red corpuscles containing such granules are present to the extent of about 0·5 to 0·8 per cent. of the total number. After repeated bleeding this proportion may rise as high as 18 per cent., and as in the organs in which red corpuscles are formed the proportion is also very high, it is deduced that these granular red corpuscles are young forms which have entered the circulation soon after losing their nuclei. Their presence is hence an index of the degree of functional activity of the hæmopoietic organs and of the state of the circulation in the marrow. Further experiments showed that in most cases of artificial anæmia, whether brought on by bleeding or by the administration of pyridine, the diminution in the number of red corpuscles was associated with an increase in

the proportion of those with granules, which did not, however, come on till the recuperative period. In a case in which the granular forms did not reappear the animal rapidly succumbed. Quinine caused a great diminution in their number followed by an increase after two or three days. The injection of lecithin also produced a remarkable diminution, so that there were no granular red corpuscles in the blood or marrow and very few erythroblasts; the blood condition did not return to normal for about 10 days. Hence it seems that certain influences tend to favour the maturition of existing red corpuscles rather than the formation of new ones. The authors suggest that this maturition occurs normally in the marrow and that the corpuscles escape into the blood after being deprived of their granules; in circumstances of great need and circulatory disorder young granular corpuscles enter the circulation just as do the normoblasts. It has further appeared that infection of an animal, whether immunised or not, causes a rapid diminution in the granular red corpuscles, while the hæmoglobin and number of corpuscles alike remain constant. Finally, in a young anæmic girl the granular erythrocytes were almost absent, but after 14 days of treatment with iron had attained a proportion of 6 per cent. of the total red corpuscles.—*Brit. Med. Journ.*, Dec. 8, 1900.

The Dangers of Electric Lighting.

The notion was at one time current that an electric installation secured the householder from many of the risks attendant upon a gas installation or the use of oil and candles. It is very doubtful if this is so, at any rate under the present methods of laying cables and of "wiring" our houses. Recent events which have come to our knowledge call very seriously for a fresh inquiry as to the methods adopted for supplying electricity to our houses. It is common knowledge now that an otherwise innocent current—that is, one of low voltage—may through certain defects become an exceedingly dangerous current of enormous voltage. "Earthing" is of course, the main source of trouble and the generally offered excuse, but if electric lighting is to be our mode of obtaining artificial light "earthing" must be overcome and it seems to us that "earthing" has not been overcome—it is happening on all sides and in several instances with most alarming results. Leakage has led to outbreaks of what have proved to be serious fires. Last week, for example, a serious outbreak of fire took place at some photographic studios in Regent-street and the fire brigade attributed the cause to the fusing of the cables at the switchboard. It is even said that the electric current used in these studios for the purpose of a flash-light "was sufficient to light St. Pancras Station." Now, there is no objection to any person if he pleases having as much current as possible laid on to his premises, but in the interests of public safety the regulations in regard to the manner of laying on this supply should be very strict, and from time to time a careful inspection of the installation should be maintained, if need be, by statute. The importance of instituting a rigid control in these

matters does not appear to be recognised. Yet the danger to the public is great. We might as well allow a large water main in communication with a reservoir containing millions of gallons of water at a high level to be erected over our heads without providing proper means of preventing leakage. In such a case a town could be easily flooded in a very short time and the inhabitants drowned assuming there were no means of shutting off the supply. In our own experience "earthing" is constantly happening, and it is well known that in this manner a very high and dangerous current may be tapped by telephone wires, gas-pipes, or ordinary voltage electric cables. No wonder, then, that public electricity is becoming a serious cause of outbreaks of fire. Just upon a year ago we reported an instance in which a drawing-room floor was ignited either by the overheating of wires or by the production of sparks through a defective system of insulation. The system of wiring must sooner or later be reformed, and the sooner the better, or otherwise disasters are certain to arise. The subject was ventilated in the press, including our own columns, some months ago, and on the face of it there was then some promise that something definite would be done. As a matter of fact nothing or very little has been done, and all those who use the electric light are still at the mercy of defective fittings and under the risks of tapping a powerful and dangerous current intended only perhaps for arc installation on a large scale. These possibilities are most alarming and the Board of Trade should be approached with a view to enforcing by very definite regulations a safer method of installation of domestic electric lighting than appears to be in vogue now. Until this is done we may only too surely expect a crop of accidents, and no confidence, it seems to us, can be placed in an electric installation until cables and wires are placed in separate tubes and "return" wires are provided. The need of doing something in this direction is all the more emphasised by the fact that our streets are crammed with a close network of all sorts and conditions of wires, pipes and mains.—*Lancet*, Nov. 24, 1900.

CLINICAL RECORD.

Foreign.

FERRUM PICRATE IN A CASE OF ANÆMIA INFANTUM PSEUDO-LEUKÆMIA.

By E. R. JOHNSON.

I have a somewhat mixed task in presenting this subject. I have first, an extremely interesting and rare disease to describe briefly; second, to speak of the pathogenesis of a certain drug; third, to show you how similar the disease and the remedy; and fourth, to relate briefly the happy results of the use of this medicine in a case which I have to report to you.

Anæmia infantum pseudo-leukæmia was first described by Von Jaksch in 1889. It is a disease of infancy, characterized by marked deficiency, not only of the red corpuscles, but also of hæmoglobin; considerable leucocytosis; marked splenic enlargement; at times enlarged lymph glands; slight enlargement of the liver. Luzet adds to these observations by further noting the large number of nucleated red corpuscles, many of which are undergoing mitosis. According to his statistics, it was met only once in fifteen hundred cases of anæmia under two years. He thinks it does not occur after two years of age. The above is taken most largely from Rotch, who concludes as follows: "As a result of my investigations of a considerable number of cases of anæmia of every grade in young infants, it seems to me we have arrived at a degree of knowledge which justifies us in making a diagnosis in certain cases of anæmia infantum pseudo-leukæmia. The course of the disease varies. All of my cases have proven fatal, without any apparent complication."

Holt, of New York, speaks particularly of the reduction in hæmoglobin and increase of leucocytes, which may be as high in proportion to red discs as 1 to 30. In one case it was 1 to 12, but rarely higher than 1 to 75. There are many microcytes, erythroblasts, and megaloblasts, the larger proportion in which they appear, the more immediately fatal the case will prove.

Briefly, then, the characteristics of this disease are: Deficiency of red discs, deficiency of hæmoglobin, increase in white corpuscles, presence of nucleated red corpuscles, splenic enlargement. Prognosis, fatal.

So far as I can find, there is no literature to be found in any materia medica upon ferrum picrate. I find in Hempel and Arndt an article from the pen of Dr. S. A. Jones, who claims that "picric

acid retards oxidization. The red corpuscles succumb to the deleterious influence of picric acid, fatty degeneration of its contents ensues, its coloring matter is set free, and it is no longer capable of carrying the oxygen to the tissues." Dr. Erb speaks at length upon the remarkable effect of picric acid on the blood. He states that the blood of those animals upon which it was used was of a dirty brown color, with distinct nuclei in the red blood discs. This is accompanied by a large increase in the number of white corpuscles.

The action of iron on the blood is so well known that any reference to it may seem unnecessary, but the following I have taken from Coperthwaite: "Ferrum acts preeminently upon the blood in such a manner as to produce a debilitating and disorganizing effect upon the entire system. It at first, and for a short time only, vitalizes the blood and increases the red corpuscles; but soon the watery portions of the blood are increased, the albumen is decreased, and the number of red corpuscles diminished." Briefly, then, picric acid and iron cause degeneration of the red discs; a decrease of the coloring matter; an increase of the white corpuscles; and under their use distinct nuclei may be seen in the red discs.

Without going further into the minutia of the symptomatology of this disease, or the finer points of the pathogenesis of the drug, let me call your attention to the important points in which the homœopathicity of this remedy to this disease is shown *par excellence*:—

Anæmia Infantum Pseudo-Leukæmia.	*Ferrum Picrate.*
Oligocythemia.	Deficiency of red corpuscles.
Oligochromemia.	Deficiency of hæmoglobin.
Leucocytosis.	Increase in white corpuscles.
Nucleated red corpuscles.	Distinct nuclei to be seen in red discs.
Mitosis.	Degeneration of the nuclei.

October 18, 1896, I was called to see Russell Cook, aged four months; only child; bottle-fed baby. Family history negative; patient plump but anæmic; colorless lips and gums; irritable; cries much of the time; suffers with indigestion and constipation; cries and strains at stool; extremely foul odor of stool; large abdomen; upon examination a large tumor of firm consistency is felt through the abdominal wall on the left side, protruding from under the margin of the ribs and extending down to within a finger's breadth of the crest of the ilium, and toward the median line to within two fingers' breadth from the umbilicus; slight enlargement of the liver. Examination of the blood by Dr. F. F. Strong reveals: Rate of leucocytes to red discs, 1 to 30. Normal red discs, 70 per cent; microcytes, 20 per cent; poikilocytes, 8 per cent; megaloblasts, 1,5

per cent; normoblasts, 5 per cent. Of the leucocytes; neutrophile cells, 20 per cent; large mononuclear or basophile cells, 60 per cent; eosinophile cells, 10 per cent; small lymphocytes, 5 per cent; mast cells, 5 per cent. Diagnosis, anæmia infantum pseudoleukæmia.

November 15, ferrum picrate, 2 X, five grains daily was prescribed. This was continued until into January, a little before the next examination, of which I will speak in a moment. Modified cow's milk was given, to which was added one teaspoonful of carnogen per day. Carnogen, as doubtless you are all well aware, is a combination of red marrow, pure ox blood, and glycerine. I believe this did much toward the general nutrition of the red blood corpuscles. But I cannot believe it was the curative agent in this case.

February 1, I received from Dr. Strong the following report of a specimen sent to him at this time: "Red discs normal, except for a few microcytes and normoblasts; moderate leucocytosis. Blood seems almost normal. At this time the spleen had decreased about one third since November 15. The color was not what I should call perfectly normal, but the anæmic appearance had disappeared very largely. The little patient had become a happy and apparently healthy child.

April 1, 1897, another report from Dr. Strong states: "Red discs normal except for a few microcytes and a very few megaloblasts. Rate of white cells to red, 1 to 150. No apparent tendency to relapse. The examination warrants favorable prognosis."

A fifth examination, the exact date of which I cannot give you, but I think it was made in July, gives the rate of white corpuscles to red discs as 1 to 200.

One point that we must not lose sight of in this case is the rate of the leucocytes to the red corpuscles, namely, 1 to 30. I can find but one other case on record of a higher rate, and this is 1 to 12. Holt gives the average case as 1 to 65 or 75. In health it is about 1 to 300. In our April report we find it 1 to 150. This is quite a change from 1 to 30 in four months, and two to three months later the rate is found to be 1 to 200. All cases previously have proven fatal whether the proportion was 1 to 100 or 1 to 65, while this case, with as high rate as 1 to 30, has recovered under the homœopathic remedy.

Holt speaks of Monte's twenty cases in which four proved fatal. He states that sixteen were secondary to rachitis and one secondary to syphilis. Taylor, of Philadelphia, who writes upon this subject in the supplement to "Reiting," disposes of the whole matter by saying

that the mortality has been 20 per cent. Not finding much literature on this subject, I wrote to Dr. Taylor last week, asking where I could find something on this disease besides what I had found in Rotch's "Pediatrics" and in Holt. But I have not heard from the doctor, and doubt not he drew his conclusions from Monte's cases. If so, I am forced to conclude that the mortality of this disease is not 20 per cent as he states, but that this has hitherto been a fatal disease in every case of primary anæmia infantum pseudo-leukæmia. If the disease is secondary to rachitis, the mortality must be the same as rachitis, which is *nil.* If secondary to syphilis, should it be higher? I think not. Now this case was unquestionably not secondary to any of these diseases.

Dr. Rotch, in closing his article on "Anæmia Infantum Pseudo-Leukæmia," in reference to the treatment says: "The treatment of this disease with or without iron, arsenic, or other drugs, is well known to be ineffectual." Whether or not we believe that ferrum picrate has proven victorious over this disease we have but this one case, which will stand as so much evidence only to be proven by the test of many cases.

Let me say in closing that the selection of this remedy for this particular case was made by Dr. Percy.—*New England Medical Gazette,* November, 1900.

Gleanings from Contemporary Literature.

THE PHYSIOLOGY AND PATHOLOGY OF INHERITANCE, OR WHAT DO WE INHERIT FROM OUR PARENTS?

A Lecture Introductory to a Course of Clinical Medicine delivered in the Newcastle-upon-Tyne Royal Infirmary on Oct. 31st, 1900.

By THOMAS OLIVER, M.A., Durh., M.D., Glasg., F.R.C.P., Lond.,
PHYSICIAN TO THE NEWCASTLE-UPON-TYNE ROYAL INFIRMARY AND PROFESSOR OF PHYSIOLOGY AT THE COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

Gentlemen,—From a biological point of view "we are the heirs of the ages." Not only in the sense that we are participators of the accumulated experience of the race, but in the physical and mental endowments that belong to each of us, do these words find scope for their realisation. Studying together, as we shall this winter, clinical medicine, it has seemed to me that the present is not an inopportune time to draw your attention to some of the less frequently discussed problems that underlie human life in health and disease. If I can show you that disease is not a morbid entity, requiring to be diagnosed and treated, but something more, and that into our conception of disease there must enter, in addition to the symptoms complained of and the physical signs of ill-health, knowledge of the individual with his peculiarities of constitution, his susceptibilities, his age and his occupation—in a word, that it is not disease as disease, but the individual with his malady that requires treatment—the time at our disposal will not have been misspent.

Disease, from the words "dis" and "ease," simply means want of ease. In health all our organs functionate without impressing themselves upon our consciousness, but in disease we are often too painfully aware of their existence. It was the opinion of the ancients that disease depended upon a chemical change in the humours of the body, and so for a period the humoral pathology prevailed, remnants of which are still seen in the nomenclature of disease. Later, disease was thought to be due to a distinct and tangible cause, a *materies morbi*, while subsequently to this it was regarded as the last link in a chain of processes of deranged metabolism and abnormal function with diminished resistance to external surroundings. Within the last two decades, owing to the great strides made by bacteriology—a science which has shown that many diseases, especially those of an infectious nature, and even others that are not appreciably infectious, are due to the entrance into the system of microbes—medical opinion as to the cause of disease has veered round to a belief in the existence of a *materies morbi*. Even here there is danger in being too exclusive. Admitting that tuberculous disease, for example, is bacillary and that there is no tubercle without Koch's bacillus, and also that pneumonia and erysipelas are equally caused by micro-organisms, it is for us to consider whether other factors are not in operation and to assign to each its respective role.

Leaving out of consideration congenital affections and deformities, or those abnormal conditions with which a child is born attributable to circumstances operating directly upon the fœtus in utero, as in congenital syphilis, I shall deal with those individuals who are born presumably healthy and yet in whose system there are such refinements of structure and deviation from the normal that as time goes on life is brought prematurely to a close by disease similar to that from which one or both parents perhaps died, or during whose lives there are exhibited traits of character or peculiarities of temper and of disposition that recall the life of the parent or of

an earlier ancestor. I eliminate congenital syphillis and congenital tuberculosis, for in these the actual disease is simply passed on to the offspring and assumes in it the same activity as it did in the parent. In the inheritance of which I speak it is not disease, but simply a susceptibility, that is transmitted.

How, then, can I best illustrate the physiology of inheritance? Galton in his book on "Hereditary Genius" speaks of the child as being not simply the product of the two lives paternal and maternal, but also of the four grandparents and eight great-grandparents and so on, indicating that into the production of the physical constitution and mental qualities of a human being there enters more than is contributed by the immediate parents. The book is an attempt to show from the family history and biography of men distinguished in literature, in science, in legislation, in the profession of arms, and in law that the qualities exhibited by men which made them renowned depended less upon their education and surroundings and more upon the physical constitution and mental powers inherited from their parents or earlier progenitors. In one sense the teaching is depressing. We are what we are because we cannot be otherwise and we become what we are through inherited qualities. Human experience, on the other hand, shows that however much certain qualities may be inherited it is not always and alone thus that they come to us. Evolved in the course of time, they have been fostered by survival of the fittest, by marriage, and by education. If we add to patience, to zeal, and to capacity for work good health, then by the proper exercise of all our powers advancement in life must be secured. Social advantages, dogged perseverance in a particular calling, good manners, and ability to utilise opportunities make for success; yet on the other hand, it must be admitted that when an individual is possessed of great natural ability or those qualities of intellect and disposition that urge to the performance of acts that lead to reputation it is almost impossible for him to have his progress thwarted either by the circumstance of lowly birth, by social disadvantages, or even by the defects of early education. By virtue of the gifts which he has inherited he overcomes all difficulties and therefore must come to the front. If there are inherited qualities that make for good, so, too, must there be others that make for harm to the individual, and it is this particular feature of inheritance that forms the theme of my discourse to day. When we ask ourselves the question, "what is it that is inherited?" we find it difficult to reply. A mother, for example, may transmit masculine peculiarities to her son which she herself does not exhibit, and it does not follow because a father and mother are highly intellectual that their child will also exhibit ability. The child, as already stated, is the offspring, not of the parents alone, but of earlier ancestors as well. Given intellectual parents, all we can say is that the chances are that their offspring will be gifted to a greater degree than children in whose family nothing beyond mediocrity has ever been attained. Ability clings to families, but in order that it may be displayed there must also be inherited capacity and zeal for work, for without these only a sorry figure will be cut in the world by the individual compared with what might be accomplished. We all know persons of this stamp—men who are extremely able, yet since they lack the other qualities they do not rise in life. The number of people must be few who would underrate the influence of early home training or the invaluable help rendered to a youth by a good and able mother. The natural ability of such a mother, finding but limited scope within the confined sphere of her maternal and domestic duties, causes her to stimulate her son to attempt a career and to achieve results which she herself could only aspire to in imagination; hence it is that able men are often the sons of clever women.

If it is true that mental gifts and physical powers are only obtained by inheritance, is no encouragement to be extended to mediocrity and no hope held out to men whose family records contain no names of sons eminent in science, in art, or in literature? To believe that one is destined to a great end is at once to command success, but there is another fatalism that leads to destruction. The age in which we live is one of keen international competition and the prize must ultimately belong to that nation which, possessing great physical vigour, natural resources, or acquired means of sustenance, finds its opportunity in equable development of mind and body in adherence to right, in patience and persistence, and in the avoidance of all causes that lead to degeneracy, physical, mental, or moral. Evolution proceeds apace in nations as in individuals. It is from the lower ranks of life that the higher strata of society are filled. There is a continual moving upwards. New conditions, fresh surroundings, and unexpected difficulties stimulate men to rise, but behind all these facts there lies the plastic material upon the hereditary acquisition of which in its best form so very much depends. In a general way, then, we support the contention of the author of "Hereditary Genius." Galton's conclusions have not been allowed to pass without a challenge. Some writers maintain that mental ability is not the outcome of ineritance but of individual acquisition, that it is the result of the operation of such causes as education and external surroundings. Without throwing myself further into this discussion at present I shall try to find answers to some of the problems I have raised by going altogether outside the sphere of the human family, whose actions, ruled oftener by sentiment than by reason, cannot always be controlled, and see whether in racehorses whose pedigrees can be accurately traced and doings recorded Galton's theory finds support or not.

The Modern Racehorse.

So far as I know there is no instance on record of a horse that was not a thoroughbred ever having won the Derby. This circumstance is appealed to in order to demonstrate the superiority of blood and the transmission of racing qualities by careful mating of sire and dam. A certain amount of doubt surrounds the origin of thoroughbred horses in this country, but to the Darley Arabian which came from Aleppo to Aldby Park in Yorkshire *circa* 1705 to 1710 most authorities attribute the commencement of the breed. Others regard the Byerley Turk as the founder of the famous family, others again claim Godolphin and Flying Childers, but Godolphin came upon the scene 20 years after the Darley Arabian and flying Childers was his own foal. It is the descendants of the Darley Arabian that form the renowned breed of English racehorses, whose speed for short distances is regarded as the outcome of inherited qualities and the result of careful in-breeding. It is an interesting fact that nearly every winner of the great races last year was a descendant of St. Simon who, although he never competed in the Derby, was yet the better horse, for he beat the Derby winner of his year. St. Simon was from first to last an unbeaten horse. He did not run in the Derby owing to the fact that his breeder, Prince Batthyany, died while the horse was a yearling and the nomination therefore became void. The last race St. Simon ran in was at High Gosforth Park as a three year old, and this race he won easily. Shortly afterwards he retired with his splendid constitution to the stud and became the progenitor of many distinguished horses—thus causing him to be considered one of the best stallions of the century. During his first six years at the stud he begat stock that won no fewer than 222 races of the value of £220,343. When St. Simon was a two-year-old he ran five races and won them all, and he repeated this as a three-year-old. The Derby was instituted in 1780 and from that date until now the race has been run every year without a break, while the St. Leger, which was commenced in 1776, has also

an unbroken record. The Derby is a one-and a-half-mile race, the St. Leger one and three-quarter miles, and the Oaks about one and a-half miles. The same weights are practically carried in the three races, horses carrying a few pounds more than the mares. The time the Derby is run in is about 2 minutes 45 seconds, but if the ground is wet it may take as much as 3 minutes 4 seconds. Bluikbonnie and Shotover covered the distance in 2 minutes 45 seconds, but Ayrshire, Merry Hampton, and Blair Athol only took 2 minutes 43 seconds. The winner of the Derby for 1900 was Diamond Jubilee, who also won the Two Thousand Guineas and the St. Leger, and who belongs to the Prince of Wales. The Duke of Westminister's Flying Fox won the Derby in 1899, and in 1896 Persimmon, also the property of the Heir Apparent, was the winner. Both Diamond Jubilee and Persimmon are descendants of St. Simon by Galopin, a Derby winner, out of St. Angela. It is an interesting fact that St. Simon and Perdita II. are the sire and dam of the Prince of Wales's three valuable stallions Florizel II., Persimmon, and Diamond Jubilee, who are said to be worth £120,000. Perhaps never in racing annals has the success of a sire ever surpassed that of St. Simon. Other horses compete with him for distinction. Amongst these is The Baron, who 50 years ago was the sire of Stockwell and Rataplan, animals more valuable in the stud than on the course. There is also the Duke of Westminister's Ormonde who was sold to America for £30,000 and who was the sire of Orme, an animal which is less known as a racer than as the begetter of Flying Fox, who was recently sold to France for £35,000. Add to the above facts the following—viz., that Stockwell is the sire of Doncaster, who is the sire of Bend Or, who is the sire of Ormonde, who again is the sire of Orme, by whom was begotten Flying Fox, and we have a line of famous racehorses which, like that of St. Simon, goes direct back to the Darley Arabian, the father of the best blood in the racehorses of to-day. On the maternal side the strain can be traced back to the Godolphin Arab, a sire who has also contributed to the production of the distinguished breed. It is sometimes said of the human family that the children begotten of an elderly father are delicate. Foals of ageing racehorses are considered by breeders, as a rule, not to be good winners, but there are exceptions. Lord Lyon, who won the Derby and St. Leger, was born in 1863. He was the sire of Minting, who was born in 1833—i.e., when Lord Lyon was 20 years old. His previous foals, however, were of no use as winners, but Minting was an exception.

What is the effect of castration upon horses from a racing point of view? The Derby is open to two-year-old and three-year-old colts, but there is no instance of a gelding having ever won the race. Curzon, who was in addition a half breed, all but succeeded in becoming the exception to this rule, but he just failed. He ran second in the Derby of 1895. The more natural and the more perfect a horse is the greater is his chance of winning. Entirety, therefore, counts for much even in racing.

We hear a good deal in the affairs of human life of the superiority of sex, and, while there is no doubt that men occupy the higher positions in society and stand out more prominently than women, it may be that greater opportunities and advantages are afforded to the one sex than are afforded to the other. Let us appeal to the experience of the Derby. Girls reach maturity earlier than boys, and for quick perception they are usually far ahead of boys. In the racing world some experts maintain that the best mares are after all the best horses—a statement that is equivalent to saying that mare Derby winners are better than the best horses that have also won the Derby. It is their opinion that racing is carried to greater perfection by mares than horses. Probably a mare at two years old is better than a horse at that age, but it would seem as if mares deteriorate more quickly than horses and compete with them unfavourably as three-year-olds. The

Derby is an open race and there mares compete with horses. They have done so, and on some occasions they have won. Blinkbonnie won in 1857 and Shotover in 1882, but previously to Blinkbonnie winning the race no mare had won the Derby since 1801, when to Eleanor, who was also winner of the Oaks, was awarded the palm. It is only right to add that fewer mares have competed and therefore they have run against odds so far as numbers are concerned. Still, the fact remains that during 120 years only three mares have won the Derby. It is fleetness of foot that is wanted, and what do the records show? The mares Blinkbonnie and Shotover ran the Derby in 2 minutes 45 seconds, but the horses Ayrshire, Merry Hampton, and Blair Athol coursed the distance in 2 minutes 43 seconds. It is only natural to suppose that in some respects racehorses are like ourselves. Some days and at certain seasons of the year we are in better physical health and spirits than at others and we do better work. The bulk of high class racing in England is in the spring and summer when mares are constantly coming into season. They are consequently placed at a disadvantage as regards the Derby, which is run in the month of May. September is the mare's month. It is then that the St. Leger is run. This is a race in which mares and horses compete on equal terms, and what do its records show? Since 1776, the year in which the race was established mares have only won 23 times out of 124. It would appear, therefore, that both in the Derby and the St. Leger the greatest speed has been obtained by horses and not by mares. In the breeding of racehorses it is absolutely necessary that the greatest care should be taken so as to mate sires of repute with mares that are well bred and distinguished as racers. An opportunity is given to breeders to show off the racing qualities of mares at the Oaks, a race which is only for fillies and which is run two days after the Derby. The winners of this race often become the dams of future winners of the Derby.

I think I have shown you that so far as racehorses are concerned the qualities that make them famous, and upon which a high money value is placed, are inherited. Blood is everything; it is pedigree that commands the price and makes both horses and mare which have been the winners of the principal races so valuable for breeding when they have become old and useless for racing purposes. One illustration of such a mare will suffice and in this instance I shall take it from our own immediate neighbourhood. Beeswing was born in 1833 and was the property of Mr. Orde of Nunnykirk, near Morpeth. She began to run when she was two years old and continued to run until she was nine years old. She ran in 64 races and she won 51 times, many of the races being over two miles in length. Beeswing won the Newcastle Cup and became the dam of Newminster, who won the St. Leger. Newminster became the sire of Hermit, who won the Derby, while Hermit was the sire of St. Blaise, who also won the Derby. Hermit was also the sire of Thebais and Lonely, both of whom won the Oaks. After 1842 Beeswing ran no more races. She was simply kept at the stud and she died at the age of 21 years. These facts, taken rather imperfectly from racehorses, show us that it is blood or family inheritance and careful training that alone can win the Derby, and that so far as the superiority of sex is concerned the evidence is in favour of the horse rather than the mare. The English racehorse is the product of very close breeding in and in. In the human family, to too close in-breeding or consanguineous marriages is attributed such mental and physical defects in the offspring as deaf-mutism insanity, and other nervous disorders. Wherever there are defects in the parents or in their family the marriage of first cousins is almost certain to be followed by an intensification of these defects in the children. If close in-breeding in the human family is bad, what is the result of this form of breeding carried on for so many years in the English racehorse? There are many who believe that the English racehorse of to-day

is degenerating. Certainly the horses are run too young, for by the time they reach four years of age many of them are practically done as racers. Sprut running for man or animals is bad, as the distance is covered at an excessive speed from the commencement to the finish. The mode of racing itself tells upon the frame of the individual animal. Add to this the cumulative effects of close in-breeding and their will be much to explain the greater delicacy of constitution, the diminished resistance to cold, and the loss of staying power observed in the racehorse of to-day. Breeders feel that fresh infusion of blood is necessary and that this can be obtained by the mating of an English sire, say, with a pure-bred dam brought from America or Australia whose predecessors, transported years ago to other soil, show a valuable pedigree which has not deteriorated in the descendants in their far-off surroundings.

ATAVISM.

Professor Ewart in his Penicuik experiments deals with subjects similar to those which we have been discussing and their application is obvious. There are uncertainties in stock-breeding just as in Galton's distinguished families. Wherever there is life there is variation. Without variation life would be monotonous and there would be no development. Stockbreeders take advantage of variation by perpetuating them so as to improve the breed. In the course of breeding the unexpected often happens; results occur that can only be explained by reversion, prepotency, and in-breeding.

Reversion.—Members of the human family do not always bear a resemblance to their parents. The likeness is sometimes rather ancestral than parental. So far as heredity is concerned the parents, we have seen, contribute a half, the grandparents a quarter, the great-grandparents an eighth, and so on, of the total heritage of the average offspring. Composed as the ovum cells and sperm cells are of innumerable gemmules it would seem as if, during development, there occurred conditions in which protoplasmic elements of an older ancestry than the parental competed with those which were derived from the immediate parents and thus succeeded in impressing upon the individual those characters that cause the offspring to resemble, not the parents but the grandparents or even the great-grandparents. That, in a word, is an example of atavism. It is sometimes a circumstance of great value. If, for example, sporting dogs are closely inbred for three or four generations the puppies are extremely degenerated and yet in the grossly in-bred litter there is perhaps one dog who is strong and has a hardy constitution, due to what is called breeding back. He resembles, in a word, a former ancestor, so that reversion would appear to have infused fresh vigour and to have rejuvenated him owing, presumably, to ancestral units having overcome and controlled the more recently evolved and less stable units which, could they have had their own way, would have given rise to "offspring bearing all the marks of decadence that characterised the immediate ancestors."

Prepotency and in-breeding.—In the breeding of animals it is generally admitted that one of the individuals is more prepotent than the other. It is neither easy to demonstrate the fact, nor, when present, to determine the amount of prepotency. In-breeding encourages prepotency. It is because the Jews are a purer breed and an older race that when they marry with the English they are observed to be the more prepotent. In-breeding carried to excess becomes a doubtful heritage. Attempts to obtain prepotency by close in-breeding are often followed by loss of vitality and fertility. By trying to keep the blood too pure species may deteriorate. In order to maintain the vigour of a race cross-breeding becomes at times a necessity. It restores vitality. The protoplasm of animal cells has apparently assigned to it a measured lease of life and unless fresh blood is introduced to rejuvenate it the protoplasm can only give rise to a limited number of generations.

Telegony.

In breeding animals for sporting or other purposes the word "infection" is employed to explain the circumstance of a female who had been fertilised for the first time by a male bearing a distinctive colour and form, and who subsequently bears offspring to another male of different colour and form and yet exhibiting a distinct resemblance to the male by which the female was originally impregnated. It is owing to a belief in the occurrence of this possibility that breeders are careful to pedigree dogs and take means to prevent prize bitches being covered by dogs that are not of good breed. These men are afraid of the baser blood showing itself in future generations. It is maintained, although it is difficult to demonstrate the fact, that the same thing occurs within limits in the human female. The example of telegony taken from biology, and which appears in nearly all text-books, is Lord Morton's mare. This mare had been, in the first instance, covered by a quagga, and succeeding foals begotten by other sires showed in a descending scale stripes on the body that recalled the zebra. While Professor Ewart, in his experiments at Penicuik, obtained striping and marking of succeeding foals by different sires as in Lord Morton's mare, he explains the circumstance differently. Ewart regards the striping not so much as evidence of "infection," or "telegony," but of "reversion," for stripes, he maintains, are not unknown in Arabian horses. Belief in harking back, or "infection," is so strongly held by breeders that it must rest on some foundation. Breeders are of the opinion that in impregnation something akin to saturation of the dam's blood and nature takes place through the sire. Is it possible that there can be any absorption from the blood of the fœtus in utero by the mother? We know from experiment that the injection of diphtheritic and protective toxins into the embryos of pregnant rabbits can kill the mother in the one instance and render her immune in the other. Physiological injection is therefore a possibility, but it is difficult to see how germ-cells occupying the depths of the ovary of the female at the date of her first impregnation can have their protoplasm so impressed by the sperm-cells of this sire that when subsequently impregnaated by other males the progeny should bear resemblance to the original sire. There is no proof that the blood of the mother or her system can be saturated, and yet such circumstances as the following are known. In breeding Bedlington terriers it is desirable to obtain dogs with as powerful jaws as possible. A Bedlington bitch is therefore first covered by a bull-terrier dog and the mongrel litter is destroyed. Covered subsequently by a Bedlington terrier dog the litter is practically pure with the exception that the puppies have stronger jaws than they otherwise would have had, and they also show much of the gameness of the bull-terrier. Anatomical structure and physiological characters are therefore present in the second litter which do not belong to the breed at all, and they could only have come from the bull-terrier. It is difficult to find examples in the human race, but Dr. Balfore of Surinam noticed among the coloured population that "if a negress had a child by a white man and afterwards fruitful intercourse with a negro, the latter offspring had generally a lighter colour than the parents." Beyond, therefore, drawing your attention to the possibility of telegony, I shall not attempt to explain it.

Heredity of Disease.

By the term "heredity of disease" I do not mean, as in congenital syphilis transmission of the actual disease from which a parent is suffering, but a susceptibility to disease. Among the hitherto recognized diseases might be mentioned hæmophilia, cancer, phthisis, diabetes, and the alcoholic habit. In hæmophilia there is transmitted to males, through the female who does not herself usually exhibit the disease, a peculiar defect confined probably to the walls of the small blood-vessels whereby on the occurrence of the

most trivial wound—e.g., lancing the gums or the extraction of a tooth—fatal hæmorrhage may occur. The hereditary nature of this disease, or the fact that the transmission is through the female, have never been questioned. An extended genealogical tree which appears in a former paper written by myself showed how, after lying dormant in the mother, the disease re-appeared in her sons.

Diabetes is, in many instances, a hereditary disease. Weil, in investigating diabetes insipidus, traced 90 members of a family extending through four generations, 70 of whom were living at the time of the investigation. The disease was traced to a common ancestor, Peter Schwartz, who was born in 1772. His descendants consisted of five children, 29 grandchildren and 56 great-grandchildren, or a total of 91 persons. Of these persons 21 were certainly diabetic and 13 were doubtfully so. Removing the doubtful cases there remained 78 persons, of whom 23 were affected with diabetes, or 30 per cent. I have at the present time under my care, two brothers aged 40 years and 43 years respectively, suffering from diabetes mellitus. In one of them the glycosuria is intermittent. The father died from diabetes and a paternal uncle is at present dying from the same disease. The maternal grandmother died from diabetes. Within the last four months I have also had under my care a father, aged 45, who is suffering from diabetes, and his daughter, aged 14 years, suffering from the same malady. The Royal Insurance Company have been good enough to send me the details of the family history of an applicant for insurance to their company. The applicant had seven brothers and one sister. The father died from diabetes, aged 65 years. One brother, aged 19 years, died from the effects of an accident. Three brothers, aged 49 years, 41 years, and 32 years respectively, died from diabetes; and one sister died from the same disease at the age of 23 years. The remaining three brothers are healthy. Facts such as these surely point to diabetes mellitus under certain circumstances being hereditarily transmitted.

When we come to deal with phthisis and cancer, the former of which is a bacillary disease, we admit that it is necessary somewhat to alter our views upon the hereditary character of these diseases. Briefly, all that can be said of pulmonary tuberculosis is that there is the accidental incidence of the tubercle bacillus upon tissues that are susceptible. Experience tells us that some families are more susceptible than others to infectious diseases. Some children take every infectious disease that is going, while others, though equally exposed to infection, escape. It would seem therefore, as if a certain habit of body was transmitted, due to some peculiarity of the idioplasm of the individual. However excellent a filter the human placenta may be it cannot prevent maternal poisons passing to the fœtus. Tuberculosis itself is so very rarely transmitted directly from parent to child that at this juncture we can ignore it, nor is there any strong evidence that the virus is transmitted and lies dormant for a period. All that is transmitted is the soil—an enfeebled constitution or diminished resistance to the particular microbe. In the close intimacy that exists between an affected mother and her infant there are doubtless opportunities given after birth for infection, but this is infection and not transmission. The soil counts for as much as the micro-organism. Charrin has demonstrated experimentally that if the blood and tissues of the body are chemically altered resistance to pathogenic germs is diminished, while Chatin and Guinard have shown that when an animal is impregnated with excess of sugar it becomes a readier prey to the diphtheritic poison and to the infection of typhoid fever. Excess of fat also diminishes the resistance to diphtheria whereas animals that have been exposed exclusively to proteid food resist for the longest time the diphtheritic poison. May not the lines of cellular nutrition which are laid down in the fœtus in utero and which are inherited be the explanation of susceptibility to disease?

It is difficult to obtain with accuracy the medical history of any human family, for where there are mental and physical defects there is rather a desire to conceal than to publish the facts. The records of insurance companies, however, to some extent remedy this deficiency. Before examining a life for insurance the details of the family history have generally been supplied to the offices. Within the last 50 years the span of human life has distinctly lengthened. In England and Wales during the period from 1841 to 1850 the death-rate in males of all ages was 23·1 per 1000. During the years from 1886 to 1889 the rate was 20 per 1000, while among females the rates were 21·6 and 17·8 per 1000 respectively, showing, therefore, a distinct gain. Opposed to these facts must be placed the number of births. The birth rate of this country during 1842 equalled 32·6 per 1,000,000 of the population, while in the period from 1886 to 1890 it equalled 31·4—a fall in the birth-rate which, if it continues, may jeopardise the future of England just as at the present time it is the cause of anxiety in France.

Pulmonary phthisis has for long been regarded as hereditary. Where there is a family history of phthisis insurance companies may accept the life, if the applicant is under 30 years of age and physically strong, but they will load it by adding a few years to it, or if several members of the family have died from phthisis they will refuse the life altogether. Experience has taught them that members of a family, some of whom have already succumbed to phthisis, are much more liable to the disease than members of other families which have no such record. Owing to the change that has come over medical opinion in regard to the hereditariness of phthisis, to fuller knowledge of its bacillary character, to improvement of the physical conditions of life, and to the fact that the death-rate from this disease is diminishing, insurance companies are disposed, according to the extent of the taint in the family, to offer less stringent terms than formerly. During the years from 1858 to 1860 the number of people in England and Wales who died from phthisis was on the yearly average 2565 per 1,000,000. During the period from 1871 to 1875 the average number was 2218. Between the years 1886 and 1890 the death-rate from this cause was 1635, in 1891 it was 1599, and in 1892 it stood at only 1468. Within these years there has been a fall in the mortality-rate of phthisis of 42 per cent. The diminution of the death-rate may be consequent upon our better knowledge of the infectious nature of the malady and improvement in the housing of the working classes, or it may possibly be due to reversion, as in the case of in-bred animals, to a healthier stock. Notwithstanding Weismann's theory that acquired characters are not transmitted, and that the germ-plasm alone is transmitted, there is yet implanted in the nucleus of the cell a tendency to variation. Its structure cannot but be influenced by the character of the protoplasm that surrounds it, and hence while Weismann's theory explains much in heredity there are still conditions that are not explained by it. Experience and statistics alone can settle the question of family phthisis. Because the death-rate from phthisis is diminishing that is no proof that the disease is not hereditary. All that this circumstance shows is that there are fewer cases of acquired as well as of inherited phthisis, and that improved vital resistance on the part of the individual is to some extent overcoming the hereditary influence.

The Mutual Life Insurance Company of New work has recently published its mortality records for 56 years. The report covers the years from 1843 to 1898 and it deals with 46,525 deaths that occurred during this period. The statistics are taken mostly from North America. The rate of mortality from all causes is observed to rise with advancing age, and the same diseases that affect youth carry off people in old age. Tuberculosis caused 5585 deaths, and with the exception of 133 cases the respiratory organs were affected in all. Dividing the age-periods into three—(1) those

under 45 years of age, (2) those between 45 years and 60 years of age, and (3) those above 60 years of age – it is observed that the mortality-rate of tuberculosis is highest at the early ages and diminishes with advancing years, although it is still observed in extreme old age, a circumstance which is contrary to what has hitherto been generally believed. Of each 100 deaths from tuberculous disease the first age-period (i.e., under 45) shows 59·2 per cent., the second age-period 28·94 per cent., and the third age-period 11·85 per cent, while taking the total deaths from all causes, tuberculosis caused 24·27 per cent., 10·88 per cent., and 4·03 per cent., of the deaths in the respective periods.

Table I.—*Showing the Mortality from Tuberculous Diseases for Various Age-periods (Mutual Life Insurance Company of New York).*

Age-periods.	Number of deaths.	Per-centage.	Percentage of total deaths from all causes.
Under 45 years	3307	59·21	24·27
From 45 to 60 years ...	1616	28·94	10·88
Above 60 years	662	11·85	4·03
Total	5585	—	—

Table I. shows that the largest percentage of deaths from phthisis occurred under 45 years of age, and that no period of life was free from it.

Table II.—*Showing the Mortality from Tuberculous Diseases in Non-consumptive and Consumptive Families respectively (Mutual Life Insurance Company of New York).*

Age at death.	Deaths in non-consumptive families.			Deaths in consumptive families.		
	From all causes.	From tuberculosis.	Percentage of deaths from tuberculosis.	From all causes.	From tuberculosis.	Percentage of deaths from tuberculosis.
To 29 years	106	38	35·8	60	31	51·6
From 30 to 39 years	372	98	26·3	194	77	39·6
„ 40 to 49 „	566	100	17·6	284	70	24·6
„ 50 to 59 „	724	49	6·7	489	77	15·7
„ 60 to 69 „	613	36	5·8	569	47	8·2
„ 70 to 79 „	325	12	3·7	398	8	2·2

Table II. shows that the greatest number of deaths from phthisis occurs under 30 years of age, both in families that have a history of the disease, and in those that are non-consumptive, and that it is larger in the "tainted" than in the "non-tainted" section for every decennial period of life to extreme old age. The taint, therefore, would seem to last pretty well all through life, so as to render the member of a consumptive family more liable to phthisis than an individual in whose family there is no such record, but the ratio of mortality among the total causes of death diminishes with advancing years, owing to the fact that other diseases come upon the scene. It is in the early years of manhood that phthisis claims the largest number of victims, for after middle age degenerative diseases of the circulatory and

nervous systems make their appearance and cause it to assume a less conspicuous position. The age of 35 years, in the experience of the Scottish Widows Fund, is that in which the largest number of deaths occurs from phthisis. From the tables drawn out by the Mutual Life Insurance Company of New York it appears that a family history of phthisis indicates (1) a liability to the disease on the part of an applicant for life insurance, and (2) that the amount of this increased liability may be estimated at 30 per cent., an estimate that holds good certainly until the age of 50 years is reached. Naturally, where there is a history of two or more tuberculous persons in a family this circumstance is of more ominous importance than where there is the record of only a single case, and the death of a parent would carry more weight than that of a brother or a sister, especially up to the age of 40 years. There is a belief that of the two parents the mother who is consumptive and in whose family there are records of this disease is more likely to transmit a liability to phthisis than the father. The statistics of the Mutual Life Insurance Company of New York, however, rather point the other way and show that the percentage liability to phthisis between 20 and 29 years of age is 43·3 when the father has died from phthisis, and 36·5 when the mother was the subject of the malady. Another point sometimes raised is whether the tendency to phthisis is not more marked between brothers and sisters than between parents and children.

Table III.—*Showing the Proportionate Mortality from Tuberculosis among those with tainted Record and arranged according to the Degree of Taint and the Age at Insurance.*

Number of members of family affected.	Total.	Age at insurance.			
		20 to 29 years.	30 to 39 years.	40 to 49 years.	50 years and upwards.
	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.
Both parents ...	14·3	—	—	50·0	—
Father	20·7	43·3	16·1	10·4	9·6
Mother	15·5	36·5	17·1	7·5	4·6
Parent and brother or sister ...	11·0	18·2	21·4	5·5	—
One brother or sister	14·3	34·1	20·6	10·2	4·3
Two or more brothers or sisters	19·4	62·5	42·4	7·5	7·5
Tuberculosis per-centage	12·7	28·5	13·3	6·8	4·6

Where there is a history of tuberculosis in both parents insurance companies will hardly accept the life. The statistics of double inheritance in the preceding table refer to such a small number of cases that they scarcely

give us complete information upon this part of the subject. Besides, where there is a history of phthisis in a family it does not necessarily follow that the sons and daughters shall die from the disease. All that can be said is, that there will be in them a greater predisposition to phthisis. Since, therefore, individuals of a tainted family may completely escape phthisis, this circumstance suggests that conditions are in operation to neutralise this hereditary tendency. Improved external surroundings, better ventilated homes and workshops, less dusty occupations, and improvement in the physique of the individual as shown by greater muscular vigour, increased weight of body and chest measurement, render the individual less liable to phthisis. All "consumptives," as the name naturally suggests, are below the normal weight. It is known that "the highest proportion of consumption mortality, and the highest proportion of underweights are found before middle age; the least percentage of consumption mortality and the highest proportion of overweights after middle age." In persons with no history of phthisis in the family there are twice as many deaths among those below than above the average weight, while in tainted families the percentage is greater—circumstances which show that poor physique and enfeebled nutrition play some part in the causation of the disease. In the experience of the Scottish Widows Fund 80 per cent., of the sufferers from phthisis fell short of the average of weight to height. Light weight, and especially losing weight, are precursors of phthisis. Robust bodily development is therefore not without a favourable influence, and yet it does not prevent phthisis, for I have seen some of the strongest athletes with splendid physical frames, sons of a tainted family, succumb one after another to the inherited malady. Nor, on the other hand, does robust physical development, even in the absence of family taint, ensure against the danger of phthisis. All are liable to phthisis but the liability is shared unequally. While, therefore, we admit that the family history has a value which cannot be ignored, personal development, station in life, occupation, and surroundings are circumstances that play a part in the causation of disease as great as, if not greater than, inheritance. Dr. Claud Muirhead, medical referee to the Scottish Widows Fund, states that 15 per cent. of their applicants for admission show a family record of phthisis, and that in his experience undoubted phthisis is more frequently transmitted by the mother than by the father, the ratio being 6·29 per cent. on the side of the father as against 8·97 per cent. on that of the mother. The experience of the Scottish Widows Fund in regard to phthisis is, generally speaking, much more favourable than that of the American office. It shows that the tendency for phthisical parents to beget phthisical children is small, the difference between the two classes of parents being only 1 per cent., the number being 8 per cent. for consumptives and 7 per cent. for non-consumptives. The subjoined table shows that where lives are selected *after* medical examination the death-rate from phthisis is distinctly lower than that of the community so far as Scotland, at any rate, is concerned, but not of people living in the country districts after 30 years of age.

Table IV.—*Percentage of Deaths from Consumption on the Total Mortality from all Causes for each Decennial Period of adult Life (Scottish Widows Fund).*

Age.	Scottish Widows Fund.	Mutual Life Assurance Company.	New York Assurance Company.	Scotland.	Ten Scotch counties.
From 20 to 29 years	31·82	37·09	40·84	43·25	32·60
„ 30 „ 39 „	29·45	28·06	35·13	30·04	23·58
„ 40 „ 49 „	15·16	19·62	28·46	19·45	13·59
„ 50 „ 59 „	6·39	10·27	23·99	8·09	7·47
„ 60 „ 69 „	3·04	6·10	18·57	5·03	2·44
„ 70 „ 79 „	0·78	5·51	12·72	0·95	0·63
„ 80 „ 89 „	0·03	—	5·56	1·97	0·52
All ages above 20	9·51	19·74	29·38	18·60	11·75

The Royal Life Insurance Company has, like the Scottish Widows Fund, been good enough to favour me with their experience of tuberculosis. Taking 188 of their deaths from this disease I find that the greatest number occurred from the fiftieth to the sixtieth years of age, that in 25 cases a parent, a brother, or a sister had died from phthisis, that in 19 one or more of the grandparents had died early (many of them presumably from phthisis), and that in at least nine of these there was a history of a parent, or brother, or sister having died from tuberculosis.

In spite of all that has been said and published by insurance offices there are still many who do not believe in the inheritance of phthisis. Personally I have no doubt as to the transmission of a susceptibility to phthisis, but the influence of this is much less than we have hitherto believed, and apparently it is in these latter years a diminishing factor. Admitting for good or ill all the influence of external surroundings, it is impossible to ignore the history of tuberculous disease in the family that is given by patients who came to the Newcastle-on-Tyne Infirmary and to our consulting-rooms. Dr. Reginald E. Thompson tabulated all the cases admitted into the Brompton Hospital for Consumption from 1855 to 1880—i.e., a quarter of a century. The history of each case was carefully recorded by the clinical assistants and the diagnosis made by the physicians, care being taken to exclude such errors as the possibility of infection from one member of the family to another. Dr. Thompson's experience confirms what has already been said. He shows, too, that where there is a family history of phthisis the members of that family who become phthisical do so at an earlier age than those of an untainted family who acquire the disease; also that where there is a history of both parents having been tuberculous there is not only a greater liability to the disease but that it develops at a still

earlier age than when there is only a single inheritance. Out of 3000 cases at Brompton Hospital Dr. Thompson found that 36 per cent. of the males gave a family history of phthisis and 58 per cent. of the females the same. In 80 cases of well-marked family phthisis he found a history of paternal inheritance in 24 instances and maternal inheritance in 30 cases, double heredity in 14 cases, and atavism in 12 cases. Among these 80 families 385 children were born, of whom 203 were males and 182 females. In them phthisis appeared in 98 males and 96 females, there died in childhood 21 males and 16 females, and there remained apparently healthy 84 males and 70 females. In other words, 194 members of these tainted families, or one half, died from phthisis, 37 of the deaths occurring in childhood. It is Dr. Thompson's opinion that the effect of paternal inheritance upon males is to cause phthisis to appear at an earlier age than in the parent and to reduce the constitutional resistance of the individual to the disease, while upon the females it also causes an earlier manifestation of the disease but if anything increases their resistance to it. The influence of tuberculous mothers, on the other hand, upon males is to increase the tendency to rather copious bleedings from the lungs, a circumstance not so noticeable in females.

I have dwelt upon the evil effects of "in-breeding" in animals. If these are bad in the case of animals how very much aggravated must they be in the human race when there is a family history of phthisis. On humanitarian grounds alone consumptives should not marry. Marriages, however, are not regulated by reason but by sentiment, and even when circumstances are made clear to one of the contracting parties, an expression of optimism usually prevails before which pathology generally has to bow.

We have seen that there is an individual and family susceptibility to phthisis. There is also a racial susceptibility and no one doubts that the characters of race are inherited. Over a period of six years ending in May, 1890, it was estimated that in every 100,000 of the population of New York phthisis claimed on an average 238·48 per annum of the white native population, 483·83 of the foreign white population, and 774·21 of the coloured population. Negroes and the offspring resulting from the union of the white and coloured races in America are extremely susceptible to phthisis, and yet while the negroes exhibit this excessive liability to the disease the Jews are wonderfully exempt from it. Out of every 1000 of the total deaths of the whole of the United States, pulmonary consumption carried off in 1880 108·79 of the general population but only 36·57 of Jews. This freedom of the Jews from consumption has for long attracted attention. It can scarcely be said that their homes are more sanitary than those of Christians or that they are more given to ventilating them. As a class they are more abstemious and their food is better prepared and they are the more vigorous race. That over-populated districts are unhealthy requires no demonstration. Dr. J. B. Russell of Glasgow found that where the death-rate was greatest the cubic space was smallest. In 100,000 of the population the death-rates from diseases of the lungs, including

phthisis, were in one-roomed or two-roomed houses 985, in three-roomed or four-roomed houses 689, and in five-roomed houses and upwards 328. Where overcrowding exists there is a greater tendency to tuberculous disease simply on the ground of contagion. It is not that the tuberculous patient gives off in his breath bacilli into the atmosphere, but that the sputum contains the microbes and as the expectoration heedlessly spat upon the floor dries and is ground into dust this rises into the atmosphere, is inhaled, and so the disease spreads. Each individual becomes thus a centre of infection to others.

We have seen that not only in the medical profession but in the public mind and in insurance offices there is a belief that pulmonary phthisis is hereditary. Careful sifting of all the facts shows that the extent of the inheritance has been exaggerated.

Without carrying the remainder of this inquiry much further I shall only say a few words on the question of the hereditariness of cancer. The mortality records of the Mutual Life Insurance Company of New York deal with 1882 deaths from cancer. The age period in which the largest number of deaths from cancer occurred is from 55 to 60 years. Statistics, both in England and in America, show that the rate of mortality from pulmonary phthisis is decreasing while the deaths from cancer are notably on the increase. It may be that cases are more carefully diagnosed now than formerly, but apart from this probability, there is a very strong feeling in the medical profession that cancer is more prevalent than it was Taking the cancer returns of the American insurance office I find that while in 1879 the percentage of deaths from cancer between the ages of 50 and 70 years was 4·23, in 1889 it was 6·22, and in 1898, 7·59. In support of the opinion that cancer is increasing I would also draw attention to the statistics of the Scottish Widows Fund kindly placed at my disposal by Dr. Claud Muirhead, principal medical adviser to that society. From 1815 to 1845 the deaths from cancer were 0·93 per cent. of the whole number. From 1845 to 1852 they were 0·72 per cent., from 1852 to 1859 2·87 per cent., from 1859 to 1867 3·0 per cent., from 1867 to 1873 4·56 per cent., from 1873 to 1880 4·04 per cent., and from 1880 to 1887 5·23 per cent. Allowing for greater accuracy in the returns Dr. Claud Muirhead admits that "the number of deaths from this cause has increased enormously, the number being more than 40 times greater than in the previous 37 years." Females die from cancer in a proportion double to that of males, their mean age at death being 62·69 years, as against 60·43 years of males. In regard to the hereditariness of cancer the statistics of the Scottish Widows Fund show that only in 9·5 per cent. was there a history of malignant disease in the parents. In 11 of the cases the disease was transmitted through the father, in 14 cases through the mother, and in one case a brother was similarly affected. The hereditary transmission of cancer is considered to be not so great as that of phthisis, a fact that must be comforting to many people who have lost near relatives from cancer.

Summing up the subject, as to what is inherited from our parents, I

would say that from a physiological point of view there is considerable evidence to show that mental, not less than physical, qualities are transmitted, that pathologically such a disease as hæmophilia is inherited, and that where there is a family history of phthisis and cancer there is, especially as regards phthisis, a greater liability to the disease than where a family shows no such record. I believe that the influence of inheritance, however, has been exaggerated. Tuberculous disease is inherited, but only in the same sense as other diseases that are due to microbes. It is in the form of an enfeebled resistance on the part of the tissues. Pulmonary phthisis seems to exhibit a kind of inheritance that is particularly its own, but on scrutiny this is found to be largely due to the domestic character of the malady which is encouraged by our home life, insanitary dwellings, overcrowding of the poorer working classes, infection, Britain's changeable climate, dusty occupations, and ill-assorted marriages.—*Lancet*, Nov. 10, 1900.

Acknowledgments.

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