GELSEMIUM

HUGHES CLUB

GELSEMIUM SEMPERVIRENS.

A MONOGRAPH

BY THE

HUGHES MEDICAL CLUB

OF

MASSACHUSETTS.

1883.

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TO

RICHARD HUGHES,

L. R. C. P., EDIN.,

WHOSE CONSISTENT PRINCIPLES AND VALUABLE SERVICES TO

THE SCIENCE OF THERAPEUTICS

WE APPRECIATE AND SINCERELY ADMIRE,

This Work is respectfully Dedicated.

PREFACE.

It has been the aim of the Hughes Medical Club, in their work during the past winter, not merely to benefit themselves, but to bring before the homœopathic profession of America the result of their attempt to advance more rapidly the much-needed revision and reconstruction of our materia medica.

The drug selected is essentially American, and of great and increasing value.

The treatment of the subject is similar to that adopted by the Hahnemann Publishing Society of England, the arrangement and particular method of Dr. Hughes, in his treatment of belladonna, having been preferred.

BOSTON, Jan. 22, 1883.

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INTRODUCTION.

Believing firmly that the study of drug proving upon the healthy, both accidental and intentional, is the only truly scientific method of establishing a materia medica, and that the principle *similia similibus curantur*, — likes are treated by likes. — is the most reasonable basis for a law of therapeutics, it has been our aim to present this study of the drug Gelsemium in a form at once free from all doubtful and unreliable symptoms, interpreted according to the present pathological views, and at the same time easily available for use in the treatment of disease symptoms appearing in the sick.

The objects of a pure materia medica are to present accurate records of drug effects upon the healthy human system, and to arrange these records in a manner available at once to the student and the busy practitioner. To the attainment of one or the other of these objects have been directed the labors of all our best writers, both in the past and at the present time; and by the perfection of both of these

objects, our materia medica would become both more practical and more scientific, and our principle be established as the true law of the science of therapeutics.

The original ideas in the *Hahnemann schema* were to retain the sensations and descriptions of provers, and to arrange them in a convenient form for reference.

By the latter plan, clinical use of those records was greatly favored, and by the former a permanent basis was established which would never require modification, in spite of varying pathological theories or altered classifications of disease. The true place of pathology was thus established as secondary for the interpretation of the material presented by the provings.

The two objections brought against the materia medica as it now stands, even in Allen's Encyclopædia, the best compilation thus far produced, are inaccuracy and inconvenience.

Many unreliable and inaccurate symptoms are to be found under every drug, and until these are winnowed out of the pathogeneses, no basis of interpretation can be properly applied, nor can the reliable symptoms be selected by the general practitioner.

The efforts of Drs. Hughes and Allen, as well as of others in the direction towards purification and

INTRODUCTION.

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revision are hence of the first importance, and should be aided by the whole profession, as far as each of us can do so, by more careful observation and description.

Dr. Allen* writes: "An individual proving is not to be discredited because of its failure to present symptoms similar to those of another proving of the same drug. The tissues and functions of an individual vary greatly in their susceptibility to drug action. . . . It is, indeed, rare to obtain a perfect knowledge of the power of any drug from one person or from a given quantity of the medicine. So it follows that we are obliged to judge of a proving by a study of its own inherent character, as well as by a comparison with other provings." Chemical and mechanical effects should of course be omitted, those arising only from the pure action of the drug being allowed to remain, separated also as carefully as possible from all imaginary symptoms and those peculiar to the provers. Symptoms which disappear during a curative action, while good for the purpose of verifying, being of such uncertain value in our present knowledge of drug action, should invariably be omitted. The question of dose in drug proving

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* "A Critical Examination of our Materia Medica," by T. F. Allen, M. D.

being still undecided, many of Hahnemann's original provings having been made with the crude preparations, and verifications by the Austrian re-provers being successfully made in the same way, it was determined to exclude all provings made with dilutions, and to test the others by the above rules, with the hope that all doubtful provings and imaginary symptoms would in this manner be excluded. Upon the uncertain question of arrangement, much has been already written, and need not be here repeated. The disadvantage of the current scheme is that it destroys the connection between important symptoms, and thus prevents the faithful and accurate narrative desired. The arrangement here adopted is intended to obviate that fault, and at the same time to retain the convenient arrangement for reference so valuable to the practitioner. Great care has been taken to keep in connection, either by repetition or plain reference, all series of symptoms the interpretation of which would be impaired by separation. Each symptom, or group, is referred to its source, as well as to those other symptoms closely related; and the commentary is placed at the end of each section, being intended as an exposition of the symptoms contained in that section, with the end in view of discovering the true pathological relationship of the drug with disease symptoms.

GELSEMIUM SEMPERVIRENS.*

BOTANICAL DESCRIPTION.

GELSEMIUM (yellow or false jessamine) belongs to the loganiaceæ, a connecting group between gentianaceæ; apocynaceæ, scrophulariaceæ, and rubiaceæ, to which latter family indeed this plant has been wrongly appended. It is likewise known by the name of field jessamine and woodbine; it is the bignonia sempervirens of Linnæus, the gelsemium nitidum of Michaux and Pursh, and the lisianthus sempervirens of Mill.

In the United States it is commonly known as the wild, yellow, or Carolina jessamine, although in no way related to the true jessamines, which belong to the aleaceæ. It has a twisting, high-climbing, smooth, glabrous stem, containing a milky juice, with perennial opposite ovate lanceolate, entire, smooth, shining, coriaceous leaves, short, petioled, dark above and pale beneath. The flowers are solitary, or on

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* Gelsemium, not Gelseminum, is the correct term, according to Jussieu, by the rules of priority known among botanists and by the binominal system of nomenclature established by Linnæus. — See London *Lancet*, Oct. 5, 1878.

short, axillary clusters, having a perfume agreeable, but rather narcotic; they have a bright *yellow*, funnel-formed, five-lobed corolla, one to one and a half inches long, calyx very small, with five sepals, stamens five, pistils two; fruit flattened, pointed, two-celled, containing four to six flat-winged seeds in each; and the berries are black.

Hale says, "This is one of the most beautiful climbing plants of our Southern States, ascending lofty trees and forming festoons from one tree to another, and in the flowering season, in the early spring, scenting the atmosphere with its delicious odor." It grows in damp, rich, clayey soil, by the side of streams, near the coast, from Virginia to Florida and Alabama. It flowers from the first of March till the last of May. The rhizoma is about an inch in diameter, is externally a brown yellow with purplish brown longitudinal lines, and breaks with a tough, fibrous fracture, showing silky bast fibres in the inner bark, a porous yellow wood traversed by whitish medullary rays, and a darker colored central pith. The roots are somewhat thinner, similar in color, externally beset with numerous thin fibres and marked by irregular longitudinal wrinkles. The drug has a peculiar, heavy, aromatic odor, and the medicinal properties are believed to exist more particularly in the external part or bark of the root.

Hale describes another plant, which closely resembles this, called the white poison vine or white jessamine, and which is sometimes gathered by mistake for the yellow. The root, however, is white, tough and straight, with a bitter, nauseous taste; white vine has white spots on the bark, and clings to the trees by small tendrils, — never seen upon the true gelsemium, — as well as having a white flower instead of a yellow.

CHEMICAL CONSTITUENTS.

In 1855, Henry Kollock found the root of gelsemium to contain an alkaloid gelsemium, a considerable amount of albumen, gallic acid, starch, gum, a bitter, green, fatty resin, a heavy volatile oil, extractive matter, and salts of potassa, lime, magnesia, iron, and silica. In 1870, Prof. Wormley made an extended examination of gelsemium, obtaining alkali and an acid, — gelseminic acid, — which latter was found by C. A. Robbins in 1876 to be identical with æsculin.

Gelseminia is a colorless, odorless solid (no crystal yet obtained), with intensely bitter taste and strong basic properties. In the free state it is sparingly soluble in water, very soluble in chloroform and ether.

Gelsemic acid is a colorless, odorless, nearly tasteless solid, crystallizing in groups of delicate needles, soluble in chloroform and ether, sparingly soluble in water. The statement has been made by Dr. Ringer, as a deduction from his experiments, that there are two active principles, one a tetanizing and the other a paralyzing agent; but no confirmation of this statement has yet been made.

PHARMACY.

Gelsemium was known for years in America, in domestic practice, as a vermifuge, being used in the form of an infusion of the root. It was also used as a nostrum called Electrical Febrifuge, being disguised with essence of wintergreen.

Dr. Bartholow recommends that the fresh root be employed, as the alkaloid, on which so much of the activity of the drug depends, is lost in desiccation. C. B. Eberle* says that the wood of the root contains none of the alkaloid. The most reliable preparation of the drug is therefore a tincture made from the fresh bark of the rhizoma and roots with rectified spirits.

The officinal preparation is the fluid extract, each

owe.

*A. J. of Pharmacy, 1865, p. 35.

minim containing one grain of the drug, each ounce one grain of the alkaloid.

The homœopathic preparation is the tincture made from the bark of the fresh root.

EXPERIMENTS ON ANIMALS.

In order to determine the general physiological action of the drug, experiments upon animals were made by Hale in 1860; also by Ott of Philadelphia and Bartholow of London in 1870. These experiments have been carefully examined and much extended by Drs. Ringer and Murrell; the results of their labors being reported at length in the London *Lancet* for 1876, 1877, and 1878. The conclusions are as follows, each step being carefully and conclusively proved by numerous and varied experiments on warm and cold blooded animals and deductions drawn, in corroboration, from all cases of poisoning in man which had been then recorded. It may be of value to give a typical example of poisoning in a cold-blooded animal, for the sake of comparison: A medium-sized german frog was injected with the drug in the neighborhood of the posterior lymph heart. Soon after the animal became apathetic, and it was found there was considerable impairment both of voluntary power and reflex action. When placed

upon its back, the frog made no attempt to resume its normal position for a minute or two. It then turned slowly over, stopping half-way, lying motionless on its side. On touching the eyes they were closed, and some minutes elapsed before they were opened again, even then the movement being performed with abnormal slowness. The loss of voluntary power and reflex action gradually increasing, the animal soon became perfectly motionless. When placed on its back, no attempt was made to turn over; the whole body was limp and flaccid, and the limbs remained in any position in which placed, either flexed or extended. On pinching firmly any part of the body, a very feeble and ineffectual attempt to escape was made, the animal falling over on its sides and back. The application of the poles of a battery to the limbs excited, in addition to the muscular contraction, faint reflex movements. In conjunction with these changes in the nervous system, the breathing became hurried and superficial; and, as the paralysis increased, respiratory movements became more and more shallow, and, finally, with total abolition of voluntary power and reflex action entirely ceased, the heart however continuing to beat for a considerable time after cessation of breathing. The rapidity with which these symptoms presented themselves and the ultimate termination of the cases varied according

to the dose, *e.g.*, twelve minims of liquid extract, in three minutes produced paralysis of motor power, and death in two and a half hours. In some cases slight, though clearly marked tetanoid conditions were present, especially after irritation with the electrode. In experiments upon warm-blooded animals, the following may be given as a typical case:—

The animal experimented upon was a white mongrel poodle, apparently in good health. Dr. Ringer writes (*Lancet*, March 18, 1876, pp. 416): Forty minims of liquid extract were injected under the skin of the back, proper precautions and observations having been previously taken.

During the first ten minutes the animal was very quiet, no material change in external condition being noticeable. In fourteen minutes it seemed drowsy and sleepy: the head and upper eyelids were drooping, the respiration (being found at first to be 18) having fallen to 9. A few minutes later the animal was placed on the floor, where it moved about readily, there being little, if any, loss of power in the limbs. Respiration at this time was 7, but became quickened by exercise to 13, and then 17, per minute. A second dose was now given, forty minutes after the first. At this time one drachm was injected, in divided doses, in different places, in order that all might be

absorbed. In ten minutes the effect was very apparent. The breathing was again reduced to 15, very shallow, and somewhat irregular. Impairment of motion was much greater, the animal staggering still more, and often falling in his walk. This last condition was evidently due to impaired sight. Occasionally the breathing was "cerebral," consisting of superficial, alternating with deep and sighing respirations. Ten minutes after this the animal became suddenly restless, staggered, and, after taking a deep breath, fell over on its side, powerfully convulsed. The convulsions continued for twenty minutes, with intermissions. Gradually the chest movements became more and more shallow, until, finally, the animal ceased to breathe, and was apparently dead. Tracheotomy being now performed, and air pumped into the lungs, distinct signs of vitality began to manifest themselves, and in the course of the afternoon the animal had sufficiently recovered to make a hearty meal, and eventually regained his usual health.

The paralysis of reflex and voluntary power seen in all these cases (the above mentioned being fair specimens) is believed to be due, not to action on the muscles: for they remained sensitive to galvanic stimulation after poisoning, nor to any effect on the brain, but to direct action on the motor tract

the cord. Dr. Ringer says: "The abolition of reflex power being proved to be due to the effect upon the cord, it is to some extent probable that the loss of voluntary power also depends upon affection of the cord. In the cases of accidental poisoning, where the voluntary power was so completely gone, the patient could not move a muscle,—could not even raise the eyelid."

The peculiar manifestations of tetanus, being investigated, were found to be due to action on the cord, being present after separation of the brain and ligation of the arteries. They are similar to, but shorter and weaker than, the manifestations from strychnia poisoning, and appear *after* loss of reflex and voluntary power,—being more marked in the posterior extremities.

These observations tend to support the view that gelsemium contains two active agents, and that the paralyzing prevents the tetanizing principle from displaying its full energy.

Gelsemium exerts so powerful an influence upon the functions of respiration, and is so pre-eminently a respiratory poison, that a description of its action on the heart would be almost unintelligible without a previous consideration of its influence upon respiration.

The results of experiments on cold and warm

blooded animals (as may be seen in the cases already given) may be summed up in the following deductions: —

a. That gelsemium in animals primarily affects respiration.

b. That it reduces the frequency of the respiratory-act.

c. That this effect appears before paralysis of motion, and passes off earlier.

d. That it causes death by asphyxia, which may be avoided by use of artificial respiration, continued until the poison is eliminated.

In the experiments upon the heart, while the ultimate effect remained the same, stasis and gradual slowing of the blood current, the rapidity of the development of these effects, and the condition of the heart itself varied with the dose given. No initial quickening was observed, nor was any irregularity of action noticed; but while, with a medium dose, a small, white, contracted heart, stopping finally in systole, was produced, larger doses were followed by a large, dilated, dark-colored, flabby heart, stopping eventually in diastole. Dr. Ringer, while unable to explain this varied result, says that the effect upon the circulation is the same, stasis being the natural condition in both cases.

To sum up the results of these investigations

upon animals, it seems probable that gelsemium acts upon the cerebro spinal centres, and particularly those parts which preside over the rhythmical respiratory movements; that it affects pre-eminently the motor centres, paralyzing this portion of the cord; that it acts directly upon the heart (pulse-rate and pressure being reduced, even after section of cord and cardiac nerves); that in animals the drug first acts upon the motor centres, and secondly, on the spinal cord.

The retention of consciousness until very late in poisoning, both in man and animals, shows that the drug has little power over the higher cerebrum, though not entirely devoid of such influence. Death occurs from asphyxia, due to paralysis of the automatic respiratory centre.

EFFECTS UPON MAN.

In order to show the peculiar differences of action of this drug in man, the following typical case of poisoning is given (*Lancet*, June 29, 1878), reported by Dr. Parsons, of himself:—

On the last day of 1875, about 3 P. M., on returning home with a vial of gelsemium fl. ext., I incautiously applied the bottle to my tongue, with a view of ascertaining its flavor, when the carriage gave a

sudden jerk, which caused me to swallow about a drachm. Not considering that I had taken a dangerous quantity, I paid little attention to the circumstance; but, upon reaching home a few minutes afterwards, I felt giddy and drowsy, but able to sit down and partake of some sandwiches. During this time strabismus gradually came on, with paralysis of muscles of mouth and throat, muffled speech, and drooping of eyelids, especially the left. These symptoms gradually increased, until the power of deglutition became impossible, and I had to remove the last morsel with my fingers, the voluntary muscles at this time being perfectly unimpaired, together with sensation and consciousness. I now became somewhat alarmed, and asked for coffee and brandy. This condition continued to increase, and my wife sent in alarm for our friend, Dr. ———. He endeavored to administer an emetic, but the power of deglutition being entirely gone, he gave up the attempt. I now stated, with difficulty, that I thought the paralysis about the face was subsiding, but feared it was extending to the muscles of respiration. Difficulty of breathing soon came on, with oppression in the præcordial region. Being placed in a recumbent position, mustard poultices were applied to neck and chest, and brandy and

ammonia given. I now became semi-conscious, and the difficulty of breathing continued rapidly to increase, consisting of a series of short, rapid respirations, followed by three or four prolonged gasps. Respiration ceased, and I became livid, and rolled in agony from sofa to floor. Consciousness had not so far left me by this time as to prevent my feeling myself becoming rigid and trying to say, "Over." After this consciousness entirely left me. Cold-water douches, stimulation of skin, and artificial respiration were used. My pulse was a mere flutter, and had almost ceased. In three or four minutes I so far recovered as to perceive light, consisting of myriads of stars, such as is perceived in recovery from chloroform. The lights of chandeliers could now be distinguished, and consciousness had so far returned that I was soon able to speak, and shortly after to sit up. The difficulty of breathing did not return, and I was soon able to swallow a little coffee. Paralysis of mouth and muffled speech continued for some hours. The pulse, up to the period of my becoming insensible, continued regular and rather full. Any movement or touch of head (which seemed greatly enlarged) most intensely aggravated all the distressing symptoms, as did also the application of any cold to lips, the dread of which was nearly equal

to that evinced in hydrophobia. During the whole period there was neither vomiting, passing of urine, nor action of bowels, and during semi-consciousness there was but little loss of voluntary muscular motion. The sight, hearing, and touch were never entirely lost up to time of unconsciousness. Left side seemed more paralyzed than right. Two hours and a half elapsed in this experience. The paralysis of mouth and lid continued until next day. During most of the time there was frequent struggling, and the face was flushed until lividness commenced, and during the later action there was profuse perspiration; but the most marked symptom was a persistent numbness in occipital region which lasted some hours after consciousness returned.

Experiments upon the effect of poisonous doses gelsemium on man also were made by Dr. Ring (*Lancet*, May 1, 1876, p. 66), six persons being acted upon seventeen times,—drachm doses of tincture being given hourly for three hours,—the special points to be attained being, of course, a comparison with its action on animals. The results these investigations were as follows (*Lancet*, Oct. 21, 1876, p. 570): —

1. That gelsemium produces but little if any effect on the pulse.

2. That it does not affect the blood pressure.

3. That in man it probably acts on the respiratory centre less energetically than in lower animals.

4. That in man it acts on the muscles of the eye, and produces other symptoms before it influences the respiratory centre.

5. That in man it in all probability affects the spinal cord before the respiratory centre.

6. That it exerts no influence on the mind, and none on the cutaneous sensibility.

7. That it does not affect the temperature.

PATHOLOGICAL APPEARANCES.

We have slight data for determining the pathological anatomy in man, few cases having been examined after death. Two of the recorded fatal cases were examined, with the following result: —

1. The case reported by Dr. Worthley (*American Journal Medical Sciences*, vol. 53, p. 271) presented few marked features. The lungs were slightly congested, the superficial veins being injected, and the heart was greatly distended with dark grumous blood, its superficial veins being also injected.

2. In the case reported by Dr. Boutelle (*Boston Medical and Surgical Journal*, October, 1874, p. 321), the patient died in spite of artificial respiration.

Five and a half hours after death the autopsy showed marked rigor mortis, the blood being dark and fluid, with no tendency to coagulation even after two hours' exposure. The lungs, kidneys, and spleen were normal, the liver dark, with much light blood. The stomach contained a few ounces of light colored fluid, with glairy mucus, its internal surface being deeply congested and marked by tortuous dilated vessels. The brain was pale, its internal surface dotted; but no coagulation appeared in the sinuses nor fluid in the ventricles.

The minimum fatal dose, in a recorded case, was about two drachms of the liquid extract, or about twenty drops of the tincture. The only reliable method of treatment in poisoning cases would be to maintain artificial respiration by some effectual plan, like that of Sylvester, until the drug is eliminated. The use of hot applications to the feet, and chafing the skin with some stimulating lotion (*e. g.*, ammonia and brandy) would also avail much, while the interrupted current might be of service in some cases.

BIBLIOGRAPHY AND SOURCES.

The first notice of this drug in homœopathic literature was made by Dr. Metcalf in the *North American Journal of Homœopathy*, vol. 3. A valuable

monograph by Dr. E. M. Hale, in 1862, contained all the information upon this drug then known. Since this time, various provings and cases of poisoning have appeared, but no complete collection of symptoms has been made until, in Allen's Encyclopædia, was gathered together, from all available sources, the provings and poisoning cases, with little apparent discrimination as to their value. The experiments by Drs. Ringer and Murrell as to the physiological action of this drug upon animals and man are of very great importance in the interpretation of the symptoms and determination of its sphere of action. The following provings and cases of poisoning have been considered reliable and valuable as a basis for further investigation: —

CASES OF POISONING.

1. Ringer and Murrell, *London Lancet*, 1870, May 6 and 20, July 15, Oct. 21. Patients, males and females. Dose, drachm doses of fluid extract.

2. Sailors, — Hale's *New Remedies*, 2d edition; *London Lancet*, 1878, p. 855. Dose not known.

3. Dr. Pinkham's case, *Boston Medical and Surgical Journal*; Feb. 9, 1871, *Lancet*, 1878, p. [illegible]. Females. Dose, forty drops fluid extract.

[illegible]. Dr. W. W. Clapp. Not obtainable.

5. Dr. Wormley, *American Journal P* 1870; *Lancet*, 1878, p. 859. Patien (several weeks pregnant). Dose, three fuls.

6. Sailors on Mississippi steamboat, ta of Tr. by mistake; two of them, taking an each, died. *Washington Medical Journal*. monograph.)

7. Dr. Davis, *American Journal Medica* 1867, p. 271; *Lancet*, 1878, p. 859. Pati Dose, tablespoonful of fluid extract.

8. Child two years old. Dose, teasp Tr. by Dr. J. A. Munk. *American Ho Observer*, 1875, p. 12.

9. Dr. Freeman, *Lancet*, 1878, p. 8 cases. First; boy of three years, fifty m second, girl of nine years, a dessertspoon third, boy of three years, mixture of quinine, and one drachm Tr. gelsemium drachms syrup (two doses, a teaspoonful All three cases fatal in about two hours.

10. Dr. Hale (monograph). Patien with hysterical convulsions. Dose, ten d water every four hours.

11. Case of Dr. E. M. Hale, related N. Martin. *Hahnemannian Monthly*, vol. Dose, twenty drops of 10^{x} dilution.

12. Dr. Falligant, *Hahnemannian Monthly*, vol. 5, p. 20. A man mistook gelsemium root for liquorice root and chewed it for some time without noticing the difference. (Man was an English surgeon.)

13. Dr. Boutelle, *Boston Medical and Surgical Journal*, 1874, p. 321. Man twenty-four years old. Teaspoonful Tilden's fluid extract, repeated in fifteen minutes; patient died.

14. Dr. Langren, *British Journal of Homœopathy*, vol. 21. Dr. B. —— took it for toothache. ose, thirty drops Tr. (Recovered.)

15. Dr. Main, *Boston Medical and Surgical Journal*, April 15, 1869. Patient, male. Dose, one drachm fluid extract.

16. Dr. Lodge, *Lancet*, 1878. Patient, female, between twenty-five and thirty years old. Dose, fifteen drops Tr.

17. Case of Dr. Tully, *Boston Medical and Surgical Journal*, vol. 7, p. 122. Girl, aged eleven, rom the stem of a piece of plant two and a half et long and three quarters of an inch in diameter, etached the outside bark (*epidermis*) and scraped ff and ate the inner bark, with the sap. Died n one hour.

18. Dr. Langren, *British Journal of Homœopathy*, vol. 21. Woman with typhoid pneumonia took

ten drops. in an hour eleven drops, in an
drops, of Tr.

19. Dr. Pattee, *British Journal of H*
vol. 21. Condemned prisoner took one
ounces fluid extract. (Recovered.)

20. Dr. Parsons, *Lancet*, June 29, 187
male. Dose, 1 drachm fluid extract.

21. Hughes' *Pharmacodynamics*, fi
1875. Three doses, thirty minims each
between the first two, and one hour betw
and third doses. Patient, a sailor,
from periostitis.

22. Dr. Seymour, *Boston Medical a*
Journal, Dec. 22, 1881. Man, t
years old: often took two ounces of Tr
doses. Had been accustomed to take
tive; died. Means tried, tincture
brandy, carbonate of ammonia, and elec

23. Planter; made a tea of the r
unknown. King's dispensatory. Dr.
Jr., *Boston Medical and Surgical Jou*
1879.

24. Lady, with neuralgic headache.
spoonful of Metcalf's fluid extract. Us
of ammonia and battery.

PROVINGS.

I. J. S. Douglass, *British Journal of Homœopathy*, vol. 21. Dose, one drop Tr. every half-hour.

II. J. J. Douglas. Dose, one to five drops.

III. Dr. Lazarus, Hale's monograph. Dose not given.

IV. Dr. Vincent, Hale's monograph. Dose not given.

V. Dr. Henry, *British Journal of Homœopathy*, vol. 21. Dose, thirty drops. (Parts of this proving, especially the eye and abdominal symptoms, are very good.)

VI. Dr. Stone, *British Journal of Homœopathy*, vol. 21. Nov. 21, 1852. Dose, six drops tincture in water; Nov. 24, fifty drops; Nov. 29, fifty drops; Dec. 16, ten drops.

VII. Dr. Bigelow, *British Journal of Homœopathy*, vol. 21. Dose, twenty drops daily for one week.

VIII. Dr. Hale, Hale's monograph. Dose not given.

IX. Dr. J. C. Morgan, *British Journal of Homœopathy*, vol. 21. Dose, first day, four, four, four, five, six, drops; second day, seven; third day, five; fourth day, five and seven; fifth day, eight

and nine; sixth day, ten and fifteen; sev
twenty-one drops: making in seven days
dred and fourteen drops.

X. Dr. W. Paine, *American Homœopath*
vol. 2, p. 80. Dose, fluid extract, five to t

XI. Dr. Zinnbrock, *British Journal o*
opathy, vol. 21, p. 419. Dose, three drop
ture; three days after, five drops of tinctu

XII. Hughes' *Pharmacodynamics*, firs
1875. Twenty drops tincture every two
three doses.

In the references which follow the symptoms, the Roman numerals refer to the provings, and the Arabic to the cases of poisoning here cited.

1. NERVOUS SYSTEM.

I. Sensibility.

1. Tingling of extremities which soon disappeared. No. 24.

2. Sensation blunted in hands and arms, but not in proportion to loss of motion. No. 15, s. 469.

3. Numbness of tongue. No. IV.

4. Numbness of face. No. IV.

5. Numb pain and tenderness along the teeth and edges of gums of lower jaw. (In only one case.) No. 1.

6. Persistent and distressing numbness in occipital region, which lasted some hours after consciousness returned. No. 20.

7. Numbness of whole body. No. 7, s. 101.

II. Motility.

8. Spasmodic breathing. No. 7.

9. During this time strabismus gradually came on, with paralysis of mouth and throat, muffled

speech, and drooping of eyelids, especially t
No. 20. (The paralysis of mouth, muffled
and ptosis continued some hours.)

10. No spasmodic movement, except the e
which kept up a continual twitching motio
the effects of the medicine lasted. No. 8.

11. Quivering of the tongue. No. 1; s.

12. The muscles of the face seemed to c
especially of the orbicularis oris, somewhat i
speech. No. IV.

13. Spasmodic pain in gullet. No. 10, s

14. Sensation of stiffness in muscles
No. VIII.

15. Movements of eyeballs are restricte
one case there was a strong double interna
No. 1.

16. Disinclination to move. No. IX.

17. Great feebleness. No. 19.

18. Weakness of legs. No. 1.

19. Lessened or impaired muscular acti
clear mental activity. No. 12.

20. Had an inclination to lie down, an
same time complained of considerable naus
17.

21. Inability to raise eyelids. No. 5, s

22. Eyelids partially closed and motion
3, s. 174.

23. Ptosis. No. 1.

24. Impaired movement of the eyeball, chiefly affecting the internal and external rectus muscles, especially the left external rectus. No. 1.

25. Partial paralysis of lids. No. 14.

26. Slight ptosis of both upper lids. No. 40.

27. Partial paralysis of tongue. No. 14.

28. Partial paralysis of glottis. No. 14.

29. Muscles of respiration seemed to be paralyzed, but the part most seriously affected was the epiglottis. No. 20, s. 390.

30. Little control of movements. No. 40.

31. Staggering gait. No. 9, s. 230.

32. Staggering. No. 1, s. 112.

33. After the first dose he became prostrated and staggered in his walk. No. 9.

34. "I was incapable of using my hands; my legs did not suffer nearly as much." No. 15, s. 478.

35. Complete muscular relaxation, with staggering and double vision. No. 9, s. 230.

36. Staggered and reeled from one room to another, as if intoxicated. No. 13.

37. Tried to walk, but staggered as if drunk. No. 14.

38. "Gradually lost control of my limbs, so that I could not direct their movements with precision." Finally would have fallen if not upheld. No. 12.

39. "Powerless, and sank quietly, first on his knees, then at full length." Unable to move, though perfectly conscious. No. 21.

40. He knew everything that was going on around him when he sank on the ground, and was unable to move. No. XIV.

41. Control over upper eyelids almost entirely lost. No. 15.

42. Lower jaw dropping, leaving mouth wide open. No. 3.

43. Paralysis of glottis, with difficulty of swallowing. No. VIII.

44. Power of deglutition became impossible. No. 20, s. 291.

45. Recovery was not complete for several days; the principal complaint being of great prostration and muscular weakness, particularly of the lower jaw, eyelids, and muscles of arms. After the return of consciousness, intelligible speech was at first possible only when the jaws were supported. Tongue also was stiff, and voice thick and guttural. No. 3.

46. Flexors of arms and hands were paralyzed, while the extensors were nearly so. No. 15, s. 478.

47. Patient powerless, and sank first on one knee, then at full length. No. XIV.

48. Arms became powerless, with loss of volun-

tary motion, sensation remaining the same. No. VIII., s. 464.

49. Unable to speak. No. 14, s. 268.

50. Inability to speak or move. No. 19.

51. Loss of voluntary motion in the lower extremities. No. IV.

52. Paralytic symptoms made themselves manifest throughout the entire muscular system; first experienced in the knee, and then in the inferior tibial region; increased unto falling. No. IV.

53. Looked strange, staggered, and fell; became listless and languid; drooping of the eyelids and complete relaxation of the whole muscular system, with entire motor paralysis. No. 8.

54. Half an hour after second dose he was limpsy as a rag; pupils dilated; froth at mouth; heart beating slowly and feebly; pulse imperceptible. No. 9.

55. He was lying on his left side, face somewhat congested, pupils dilated but responding to the different degrees of light, eyelids half closed with apparent inability to move them, lower jaw dropping, and his tongue — to use his own language — "so thick that he could hardly speak." Skin was warm and moist, pulse small and feeble, and respirations somewhat diminished in number. No. 7.

56. "Complete loss of muscular power, was unable to move a limb, or even to raise his eyelids, although he could hear and was cognizant of circumstances transpiring around him." No. 20, s. 70.

57. Total loss of muscular power. Nos. 1 and 6.

III. Perception, Ideation, and Emotion.

58. Perfectly conscious, but unable to move. No. 21, No. XIV., s. 39, 40.

59. Clear mental activity, with impaired muscular activity. No. 12, s. 19, 38.

60. Conscious, but believed herself dying. No. 24.

61. She seemed to know everything that passed, and described her symptoms. No. 18.

62. Recognized us and spoke. No. 40.

63. Perfectly conscious, with feelings like commencing intoxication. No. 21.

64. His feelings were like those which he had experienced after commencement of intoxication. No. XIV.

65. Intoxication. Vertigo unto falling. No. IV., s. 129.

66. Felt and seemed drunk, though without any incoherence or mental excitement. No. 1, s. 112.

67. Could hear, and observed all that was going on around him. Nos. 1 and 6.

68. During the afternoon, inactivity of mind and body. No. IX.

69. The sensorial modification consisted of a mistiness within the brain, not much affecting the lucidity of thought, but somewhat confusing perceptions, so that I experienced some difficulty in attending to the physical details connected with my practice. No. III.

70. "Respiration now apparently ceased. I became livid, and rolled in agony from sofa to the floor. Consciousness had not so far left me as to prevent my feeling myself become rigid and trying to say, 'Over.' Consciousness then entirely left me. Pulse a mere flutter, and had almost ceased; pulse regular and rather full up to time consciousness left me." No. 20, s. 390.

71. Said she felt faint, as if her blood had ceased to circulate, and as if her head were light. No. 18.

72. Easily roused. No. 40.

73. At 10 A. M. he went to the Dispensary, where he saw several wounded men. At other times such things did not affect him, but to-day he was very seriously affected by it. He grew weak; his comrades remarked that he grew very pale, whilst he felt some nausea, and shivering of the lower limbs

for about ten minutes. All this went off in the open air. No. VI.

74. Confusion almost amounting to delirium. No. 11, s. 124.

75. For several days as if stupid, not inclined to say a word (which was remarked by his friends, who did not know he was proving). No. VI.

76. Disagreeable humor. Incapable of reflection, as after intermittent fever, with a dull, not violent, headache the whole day, and digging in the right ear all the afternoon. No. IX.

77. Could recognize no one in the room, though close to bed. No. 18.

78. Unconsciousness. No. 8, s. 377.

79. Apoplectic stupor. No. 16, s. 391.

80. Threw herself on the floor and became unconscious. No. 13.

81. Unconscious and could not be aroused. No. 13.

82. Totally unconscious; breathing stertorous and very imperfect; countenance of livid paleness; lower jaw dropping, leaving mouth wide open; eyelids partially closed and motionless; pupils moderately dilated; pulse, one hundred per minute, regular but weak. No. 3.

83. I found it to affect the power of concentration very materially. I could not fix my mind on the

contents of a newspaper, although the matter was of an exciting character. I could not pursue one train of thought for any time. Ideas would vanish and leave a vacancy of thought which was quite annoying. No. VIII.

84. Restless all night, — plagued with unpleasant dreams. No. VI.

85. There was at first a careless, cheerful morale, afterwards depression of spirits. No. III.

86. Melancholy, despondling mood. No. V.

87. He is melancholy and desponding. No. V.

88. Sad, disinclined to exertion of any kind, easily tired and exhausted. Headache beginning after dinner and lasting till evening. No. VII.

89. Dejection, with undefined pain in the head. No. IX, s. 214.

90. Inability to concentrate the mind, depression of spirits, anxiety, incoherency of thought. No. IV.

91. Anxiety and restlessness. No. I.

Commentary.

The action of this drug on the sensory sphere seems to be but slight, and of one kind only, viz., anæsthesia; the symptoms, few in number, ranging from "tingling of the extremities," as evinced in

symptom 1, to numbness, as per symptom 6. this numbness in no case amounting to complete loss of sensation; hence we have not a true paralysis. but a diminution of sensation only (sensory paresis), probably central in its origin.

On the motor sphere the activity of the drug varies from simple spasmodic movements, as in symptoms 8 to 15, through general weakness, feebleness, and slight paralysis (symptoms 16 to 37), to total loss of muscular power, as in symptom 57; hence we conclude that its mode of action is at first very slightly irritant, as shown by slight spasms, afterward depressant, as shown by complete paralysis.

In conclusion, we sum up in brief the points at all substantiated by facts: —

1. The only point which seems at all settled is that the paralytic action is central, and not peripheral, as is also shown by the experiments of Ringer and Murril.

2. That the paralysis being almost entirely motor, instead of sensory, it would seem that the effect of the drug is expended largely in the anterior columns of the cord.

3. From the fact that among the earliest symptoms are the paralysis of the glottis, tongue, and face; later, the general weakness, staggering gait, and loss of muscular power, it would seem plausible

that the effect of the drug was progressive from above downwards.

The physiological action under this head seems to be that of a sedative to the motor nervous system. At first, mental action is unimpaired, but finally there is a feeling like commencing intoxication, or entire unconsciousness (opium, hyos.), and apoplectic stupor. At other times there was only an inability to concentrate the mind (bell., conium, hyos., stram.). Its action seems to be on the cerebrum and motor centres of the medulla oblongata.

IV. Sleep.

92. Very little inclination to sleep; when he does sleep he dreams about business, etc. No. VII.

93. At first it seemed to cause drowsiness; afterward aggravated the habitual sleeplessness. No. III.

94. Wakeful till one in the morning, with longing for study. Previously a pain behind the fifth rib towards the left edge of the sternum, relieved by eructations. No. IX.

95. Very restless night (after ten drops of the tincture). No. VI.

96. In the afternoon feeble and sleepy when sitting down to study. Slept an hour, and when

he was awakened was at first hardly willing to move. The eyes transiently injected. No. IX.

97. Feebleness or sleepiness when sitting or leaning, yet it was a short time before a thunder-storm. No. IX.

98. Through the day he felt himself stupid and prostrated, with less pain in the muscles and a dull pain in the occiput. Nos. VI. and XII.

99. When under the influence of the drug the patient is pale, with heavy, sleepy look; some say their eyes feel sleepy, others yawn frequently and say they can hardly keep awake, and do fall asleep if let alone. No. I.

100. On reaching home a few minutes afterwards I felt giddy and drowsy. No. 20.

101. Inclined to sleep, with deep inspirations and numbness of the whole body. No. 7.

102. Drowsiness with dimness of vision, — a kind of drunken stupor. No. IV.

103. Dreamy sleep and early awakening. No IX.

104. Sound sleep the greater part of the night. No. IX.

105. Could sleep late in the morning. No. IX.

106. Sound sleep in latter half of night, heavy on waking. No. IX., s. 212.

107. Good sleep till 7 A. M., difficult waking and weariness. No. IX.

108. On falling asleep, wandering talk and longing after imaginary things. No. I.

109. Had a very restless night, with disagreeable dreams after midnight. No. VI.

109 (²). Sleep disturbed by lancinating pains in the abdomen. No. IV., s. 326.

Commentary.

As regards the sleep symptoms of gelsemium, little can be said. Sleeplessness is more characteristic of the drug than sleepiness. The sleep that does follow its use is restless and dreamful, more natural the latter part of the night and early morning.

2. HEAD.

110. Severe vertigo with blindness. No. V., s. 227.

111. Vertigo and headache. No. 4.

112. Giddiness was a prominent and early symptom. Some felt it over the whole head; by far the larger number, however, said it was limited to the brows. Standing or walking made it worse. When well marked the patients staggered and were afraid even to stand, much more to walk. Some described their heads as going round and round; they felt and

seemed drunk, though without any incoherence or mental excitement. No. 1.

113. I felt giddy and drowsy. No. 20, s. 100.

114. My head began to have a swimming, turning sensation, as if I were going to be seasick. No. 12.

115. Light-headed and dizzy; much increased by sudden movement of the head, and walking. No. X.

116. Light-headed, and dim vision continuing for an hour. No. X.

117. Oppressive pains in the right temple, with dizziness and blurred vision, such as may follow the use of intoxicating liquor, but without the exhilarating effects. The dizziness and blurred vision were attended by nausea and continued three hours. No. X.

118. The drug first produces pain in the brows, followed by giddiness, then pain in the eyeballs, and soon after by dimness of sight. No. 1, s. 218.

119. Pain generally limited to forehead, and most marked just over the eyes. Some call it a dull sensation over the eyes, others a heavy pain, others a giddy pain; one had a pain over the occiput, with sensation as though crown of head were being lifted off in two pieces. No. 1, s. 218.

120. After breakfast a transient feeling of giddiness, followed by indistinct vision, especially of

distant objects. On getting up, dull pain in the occiput, and slight pulsation in right side of head. Before, at breakfast, transient, slight, cutting pressure on the left side of head. No. IX.

121. Pains over the whole of crown, extending to the occiput, with general dizziness, and a disagreeable, painful sensation over the whole head. No. V.

122. Pain over the whole cranium, extending to the occiput. Dizziness and disagreeable sensation of pain in the whole head. No. V.

123. Head light. No. 18, s. 71.

124. Severe pain in the forehead and vertex, with dimness of vision, roaring in ears, a sensation of enlargement of the head, and a wild feeling — a confusion — almost amounting to delirium. No. 11, s. 355.

125. Confusion of head, etc. No. IX, s. 402.

126. At 11 A. M., very violent aching in the occiput for a few moments. Very stupid, as if deaf, with objection to all study. No. VI.

127. Sensation of weight and pressure in the head, violent oppressive pains on the forehead and crown. The headache is most oppressive. No. VII.

128. Heaviness, with sense of fulness in head which increased to a severe headache, relieved on the

third day of the proving by copious urination, after which a pleasant languor pervaded the whole system for some hours. No. IV.

129. Dulness of head with stupor, dry mouth, coated tongue, bitter taste, pulse full and 80, intoxication, vertigo unto falling. No. IV.

130. Chilliness, especially along the spine, pressive pains in head, especially temples, at times in occiput, at others all over head. No II.

131. Dull, painful sensation of weight in the occiput. No. VI.

132. Pain as from a band around the head, with shooting pain in both jaws and parietal bones. Pains in left side of head, extending from protuberance of the parietal bone to the mastoid-process periodically. No. V.

133. Wandering pain in head; afterward a fixed, dull, drawing pain, especially in the occiput in region of the mastoid, and extending from above in the neck toward shoulders, relieved by leaning head and shoulders on a high pillow, soon after supper in sleeping, and on awakening still some headache. Mind collected and clear. No. IX.

134. Drawing in right side of head on the crown towards the occiput. No. I., s. 198.

135. At 9.30 sneezing, with dull pain in head.

136. Dull pain in the occiput. No. VI., s. 98.

137. Dull, not violent headache the whole day. No. IX., s. 76.

138. Dull pain in left side of head, also in lower extremities as if deep in the muscles. No. VI.

139. Dull aching in occipital region, extending now and then to the frontal bone. No. VI.

140. After breakfast dull aching in head, becoming more violent in the occiput as the day advanced. No. VI.

141. Full and crowded feeling in whole head. No. X.

142. Headache increased till after dinner when it abated, but about 4 P. M. returned worse than before, and seemed to increase constantly till in the evening it was intolerable, with some nausea. Shaking of the head seemed to relieve it; at the same time he felt very chilly, and at nine went to bed. Lying down did not diminish the pain, yet he succeeded in getting to sleep, and slept from 10.30 to 2.30, when he was wakened by very severe painful aching in left frontal region, extending to right occipital region, afterwards over the whole head. It lasted an hour and then passed off entirely. No. VI.

143. Ill-defined pain in head, with dejection, stomach-ache, and colic. No. IX., s. 214.

144. Pain, as if the brain was bruised, continuing two days. No. X.

145. Through the day, tendency to headache on moving, especially on going up stairs. No. VI.

146. Headache beginning after dinner and lasting till night. No. VII., s. 88.

147. Sometimes the headache is absent. It is usually the first symptom, and is followed by the eye symptoms; rarely the eye symptoms precede the headache. No. 1.

148. In an instant pain under floating ribs disappeared, but appeared as suddenly in the left temple, causing an involuntary contraction of the brow. No. X.

149. After breakfast dull aching in right side of head. No. IX.

150. Headache in the occiput. Nos. VI., XII., s. 98.

151. Throughout the day, aching in the occiput, increased by moving, especially on stooping; much worse toward evening. No. VI.

152. Pain in back of head and limbs. No. I.

153. Numbness of occiput. No. 20, s. 6.

154. Any movement or touch of hand (which seemed greatly enlarged) most intensely aggravated all the distressing symptoms. No. 20.

COMMENTARY.

The symptoms of vertigo, drowsiness, and headache, as mentioned in symptoms 110 to 131, are those of cerebral hyperæmia and that form described as venous congestion, passive. In symptom 120 there is mention of slight pulsation in right side of head, but with this exception the headache is described as a dull, heavy pain, a sensation of weight and fulness. (Symptoms 134 to 141.)

Symptoms 132, 133, and 142 have a distinctly neuralgic character, and give us a hint as to the use of the drug in that affection. Gelsemium seems to have a different action from belladonna, the latter corresponding to arterial congestion, active hyperæmia, as evidenced by the throbbing, pulsating character of the pain, the flushed face, etc., the face, in gelsemium, being mostly pale, until such time as the respiration becomes embarrassed, when the face becomes red even to lividity.

3. FACE.

155. Face was flushed and hot to the touch. No. X.

156. The face was flushed till lividness (which was produced by embarrassed respiration) came on. No. 20.

157. Face somewhat congested. No. 7, s. 55.

158. Sensation of feverish heat in the face (noticed three separate times). No. X.

159. Heavy besotted appearance of face. No. VIII.

160. Face pale. No. 40.

161. Paleness of face. No. 1, s. 99.

162. Countenance of livid paleness. No. 3, s. 82.

163. He turned very pale. No. VI., s. 73.

164. A papulous eruption on the face, very nearly resembling measles; erythema of the face and neck. No. VIII.

165. Violent but not long-continued itching on small spots on the face and at the roots of the hair and at right side of forehead and elsewhere on the scalp. No. IX.

166. Pains shooting from the frontal sinuses to the eyes and jaws. No. V.

167. A stitch diagonally downward over the right eyelid, afterward a feeling of contraction in the scalp on the middle of the forehead. No. IX.

168. Muscles of the face seemed to contract. No. IV., s. 12.

4. EYES.

169. Yellow color of eyes. Nos. VI., V., s. 446.

170. Difficulty of keeping eyes open, from heaviness of lids. No. 21, No. XIV.

171. Eyes suffused, with face flushed and hot to touch. No. X.

172. He was quite unable to raise his lids. No. 21.

173. Eyes very much inflamed and weak, now and then with lachrymation. No. VII.

174. Eyelids partially closed and motionless, pupils moderately dilated. No. 3, s. 82.

175. Eyes transiently injected. No. IX., s. 96.

176. Eyes flushed. No. 40.

177. Partial paralysis of eyelids. No. 14.

178. Pupils expanded and insensible to light, eyes fixed, and inability to raise the eyelids. No. 5, s. 427.

179. Pupils moderately dilated and reacting to light. No. 40.

180. Eyes could be touched without contraction of the lids. No. 13.

181. Eyes wide open, pupils dilated. Nos. 18 and 14.

182. Pupils dilated. No. 8.

183. Pupils dilated. No. 19.

184. Slight ptosis of both upper lids. Pupils widely dilated and not responding to light. Nos. 40 and 24.

185. Pupils dilated, but responding to the different degrees of light, eyelids half closed, with apparent inability to move them. No. 7, s. 55.

186. Dropping of the eyelids. No. 8, s. 53.

187. Ptosis. Nos. 1, 3, 5, 7, 15, 20, s. 9, 21, 41, 45.

188. Pupils dilated and not responding to light. No. 13.

189. Pupils dilated. No. 9, s. 54.

190. Pupils widely dilated, spasmodic breathing, surface cold and congested, pulse almost imperceptible. No. 7.

191. When ptosis was well marked, the effort of opening the eyes wide caused considerable pain; the patient seemed to get relief by closing them. No. 1.

192. Pupils usually contracted. No. 1.

193. Eyes felt heavy, No. 13.

194. Heaviness of the eyes as after night watching. No. IV.

195. The eyes are sore all night without acute pain, only soreness, with sensitiveness to light and copious lachrymation. No. VI.

196. Pain in the eyes as if sore; it is as if some

foreign body were irritating the conjunctiva. No. VI.

197. Sore pain in the eyes all night. No. VI.

198. After three drops of tincture in four minutes, drawing over right eye. Three days after, after five drops in eight minutes, drawing over right eye; in ten minutes more, humming in the ears; in twenty minutes, drawing in right side of head on crown toward the occiput. No. I.

199. Pains shooting from the frontal sinuses to the eyes. No. V., s. 166.

200. Aching pain in the eyeballs, now and then shooting in character, occasionally worse in one ball, sometimes followed but usually preceded by headache. Headache and pain in eyes, worse from moving eyes. No. 1, s. 147.

201. In the eye the pains are pricking, and pass from the middle of the eye to the canthi. No. V.

202. Pricking pain in eyes from centre to the canthi. The pain seems to twist about the right eye; pains from back of nose to eyes. Deep inward pain in the left eye, extending from above and downwards. No. V., No. II.

203. As yesterday, during the night the eyes smarting much. No. VI.

204. On the right side the pain seems to roll about in the eye. No. V.

205. Pain from the dorsum of the nose to the eye. No. V.

206. Pains deep down in eyes, from above downwards. No. V.

207. Appearance of smoke before the eyes, and pain above them. No. V.

208. Impaired movement of ball. No. 1, s. 24 — 15.

209. Strabismus. No. 1. 20, 59 — 15.

210. Eyeballs kept up a continued twitching movement. No. 8, s. 10.

211. Where he turns his eyes the light is slow in following; things for some seconds seem to quiver; the eye remains unsteady in the new direction, yet without cloudiness or other confusion. This symptom I had during my long recovery from fever in the previous year, when I had taken Gels. on the first day, and I had it for a whole week, till Nux vom. 3 partly relieved it, and Acon. 3 removed it entirely. It is accompanied with an inclination to close the eyes partly, as if one wanted to make the eye steadier by pressure of the orbicular muscle. No. IX.

212. The indistinct vision gradually passed off in the evening, and sound sleep greater part of night. No. IX.

213. Dimness of vision, with nausea. No. 5, s. 305.

214. At 4 P. M. he took a small tablespoonful of red wine; immediately, for the first time that day, came the eye sufferings, but only for an hour, but were so severe that others might have suspected drunkenness; previously, dejection with undefined pain of head; with this, stomach-ache and colic. No. IX.

215. After breakfast a very remarkable return of the indistinct vision, with eyes looking dim, which might be compared with the effects of alcohol. When he held his finger perpendicularly before his nose (pressing on it), or if he closed one eye, the loss of sight was considerably diminished. No. IX.

216. Dilatation of pupils, amaurosis, diplopia, blindness, dimness of sight. No. IV.

217. Indistinct vision, especially of distant objects, preceded by giddiness. No. IX., s. 120.

218. In every case sight was affected; indeed, dimness of vision and giddiness seem to be the most constant symptom, and may exist without headache or double vision. At first the sight, without being misty, is not as clear as usual; then slight mist comes before the eyes, one patient comparing it to "a lot of smoke rising before the eyes," another to "a thick veil." At last sight fails almost completely, failing first with distant objects; gradually nearer and nearer objects become hazy. No. 1.

219. All objects appeared very indistinct when dizziness of head increased. No. X.

220 Partially blind, rapidly increasing so that "she could scarcely see at all." No. 17.

221. At 8 A. M. eight drops; all day more or less indistinct vision; next day eye symptoms as previously; after fifteen drops at 3 P. M. the disordered vision got worse during the evening; next day at 8.20 A. M. twenty-one drops in water; till 4 P. M. the disordered vision was in an aggravated form, and eyes somewhat affected next morning. No IX.

222. "I became nearly blind." No. 15.

223. "I am blind! I cannot see! What in the world is this I have taken?" No. 7.

224. With dimness of vision, a severe pain in forehead and vertex. No. 11, s. 124.

225. "I cannot see you." No. 14.

226. Eyesight dim so she could not distinguish faces about her. Next day dimness returned when eyes were used. No. 24.

227. Total blindness very soon after the dose, with severe vertigo. No. V.

228. Diplopia which I could correct by an effort of the will. Distant objects seemed indistinct as I rode or walked, and one evening I could read, but with difficulty. These symptoms are characteristic,

as my sight is perfectly good and I never have anything the matter with my eyes. No. III.

229. Soon after taking it she complained of dimness of vision and seeing objects double, and loss of muscular power. No. 9.

230. Double vision with staggering gait. No 9.

231. He saw things double, one thing appearing beside another. No. 21 and No. XIV.

232. Diplopia: two varieties, the one transient, the other permanent.

The transient is a very pleasing phenomenon. In this form, images in the median vertical line appear double, distant objects first undergoing duplication. Sometimes patient was conscious that the diplopia was coming on; thus one woman said, "I know it is now coming on: I feel such a heavy weight under my upper eyelid." It then came on, and with the heaviness ceased in a few moments. One image was higher than the other. The following descriptive notes were taken by Dr. T. Fox, the phenomena occurring as fast as they could be written: —

"One gas jet appears about six inches above the other, and there is six inches between them horizontally; the upper one is to the left; now the right is uppermost, now the left slightly again; going over to the right now again, exactly over one another

now, and quite close together; now again separated, left highest; now, over one another."

The Permanent Diplopia. — The phenomena follow a definite order, and take place only in the upper half of the field of vision. It occurred first with objects held to the extreme right or left of the visual field, then gradually with objects held nearer and nearer the median line, and finally (usually for a short time only) objects in the median vertical plane seemed double. As the effect of the drug passed off, the double vision disappeared in inverse order. The *transient* usually precedes the *permanent*, and may even come and go, while the permanent diplopia lasts. No. 1.

233. The patient stated that before she became unconscious, objects appeared double, and then she grew by degrees completely blind. No. 3, s. 82.

Commentary.

The various symptoms ascribed to the eye may be explained as due to derangements of the circulatory and nervous systems. Those imputed to disturbed circulation may be easily described; but those dependent on a disordered nervous condition are not easily understood or accounted for.

The effects of the drug are first and chiefly seen

in the eyes and brows, and are among the most characteristic symptoms. Pain in the brows is one of the earliest things noticed; and this would indicate that perhaps the nervous system receives the primary impact of the drug. Giddiness, pain in the eyeballs, and dimness of sight soon appear, and the peculiar congestive effects of the drug now are becoming manifest.

The constant reference to "heaviness of the lids" renders this condition of the lids a prominent symptom, — and, indeed, it is one of leading importance, from a therapeutic standpoint. At first, there is an apparent sensation of heaviness *in* or *under* the upper eyelids. This soon increases, and the lid becomes not only heavy, — more than that, for the palpebral vessels are surcharged, — the lid droops, and the paralyzed muscle, finding its task too much, can with difficulty lift it, and even, in some cases, fails to do so; and complete ptosis results. Closing the eyes gives relief, for the heavy lid finds support, and the tired muscle relaxation and rest.

In no part of the system are the peculiar congestive effects of gelsemium more apparent than in that part pertaining to the eye. Besides the engorged lids, we have the suffused and injected conjunctiva, transient in its appearance, probably because due to a venous stasis, similar to what occurs in

alcoholism, from want of return of blood through the veins.

Giddiness is an early and prominent symptom, most often seemingly limited to the brows. Standing or walking makes it worse, with staggering, and fear of the upright position, and entire freedom from mental excitement.

Associated with the foregoing are the derangements of vision. Dimness, even going on to temporary loss of sight, is a very constant symptom, and is also largely due to this congestive [illegible] although not entirely so. Not only are the palpebral vessels overfilled, but, as well, the other vessels of the eye. Among these, and one which must play an important part, is the arteria centralis retinæ. This artery is peculiarly placed, anatomically: it pierces the optic nerve shortly before its entrance to the globe of the eye, passing into the eye with the nerve, and immediately breaking into branches.

The fine adjustment of these parts, — the artery piercing the centre of a nerve having so important a function as that of sight, then, later, dividing and ramifying with the terminations of this nerve, so intimately interwoven that there never has been suggested a description of this blood supply as a separate layer, but rather as an adjunct of th

nervous layer, very closely interwoven with the nerve filaments, — all this makes up a system so nice in its accommodation that slight relative changes produce grave disturbances. A congestion of this small blood system can, and does, undoubtedly, derange and interrupt the nerve currents, so that various phenomena result. If a small branch of the ophthalmic ganglion accompanies this artery, as described by some authors, congestion, with disturbance of the action of this nerve, is sufficient cause to account for all the abnormal peculiarities of vision.

The confusion of sight is a constant effect, and is usually associated with giddiness. At first, the sight is only a little dim, not even misty: then there is a slight mist before the eyes, like smoke or a veil, and the sight begins to fail for distant objects, then with those nearer and nearer, which become hazy; and, finally, total blindness may result. The retina becomes filled with sluggish blood, its vessels distended, and pressing on the terminations of the nerves, and the sensation of sight cannot be received. In these conditions the pupils are widely dilated, there is a sensation of enlargement of the head, and the breathing becomes slow, irregular, and often shallow, with full and languid pulse, — all of which symptoms point to a venous stasis.

The defective vision is not due to the dilated pupil, for the sight becomes normal long before the pupil resumes its condition proper.

The phenomena dependent on the nervous system, we confess, are not so readily or so satisfactorily explained.

These symptoms are very variable, often temporary, and are not so constantly prominent as those already observed. One remarkable circumstance may be noted, from which we do not, as we say, deductions, simply because we have thus far failed in our attempts: but the nerves which seem to be especially affected by gelsemium are those nerves which pass through and lie in the cavernous sinus. That this is of any importance, we cannot say, and simply record it here as a peculiarity worthy of notice.

The most constant symptom here, and the one of greatest therapeutic value, is double vision. Indeed, this symptom, combined with ptosis, giddiness, and pain in the eyeballs and brows, forms a group of symptoms which point unerringly to gelsemium.

This double vision may be due to several causes. We know the retina is injected, and, although there is no proof that the optic nerve is affected, yet it is possible it may be disturbed in its action by the direct influence of the drug.

Other nerves are deranged, notably third, fourth, and sixth, and, possibly, from lack of co-ordination, each eye conveys a distinct impression. This seems the more plausible theory.

The sixth nerve appears to be one of the first affected, resulting in a partial paralysis of the external rectus, which gives an internal squint; but the third and fourth soon share in this paralysis, which is only partial, but which deranges the normal tone of the muscles so much that the eye is impaired in its movements, unsteady, constantly twitching, and, upon voluntary motion, the eyes is vacillating, giving a sensation of a quivering of the objects looked at, and a sense of tardy vision.

The pain in the eyes is intensified by motion, an effort being required to give motion.

The pain in the brows and the eyes is due to effects on the third nerve; as is also the pain in the balls of the eyes through the ciliary nerves.

The pupils are more often dilated than contracted, the contraction usually appearing first, and being due to a stimulation of the third nerve, as the first effects of the drug. But its toxic effect in man invariably produces dilatation, from paralysis of the branch supplying the iris. It has been explained that the nerve supply to the iris is first stimulated by the drugs and then paralyzed, it taking a larger

dose for this last, and also taking a longer time to throw off the effects of this dose.

The symptoms produced by gelsemium on the face have no well-marked therapeutic value, and are the result of the action of the drug on the circulatory and respiratory systems. Its first result is rather due to deranged circulation: hence is seen the flushed, slightly congested face, giving a sensation of heat, and also actually hot to the touch. But this is of comparatively short duration, as the respiratory function soon becomes embarrassed, and causes a pallor to succeed to the former condition. This is due to a venous stasis, increasing as asphyxia becomes more and more imminent; so that the face may assume a livid, or even icteroid, appearance. The eruption and meagre pains noted in the face are subordinate symptoms, and receive explanation under the more general and analogous conditions of the skin and nervous system. Considered therapeutically, the symptoms of the face are never of primary importance, and are only of value as confirming the more marked and characteristic symptoms of the drug elsewhere noted, which point with such accuracy that one could hardly overlook its application.

5. EARS.

234. Towards noon, while sitting, a stitch in the meatus auditorius externus. No. IX.

235. Digging in the right ear all the afternoon. No. IX., s. 76.

236. Humming in ears. No. I., s. 198.

237. Roaring in ears. No. II., s. 124.

238. Rushing and roaring in ears; sudden and temporary loss of hearing. The pains which extend from the back to the occiput often affect the ears. No. VIII.

Commentary.

The symptoms of the ears are very meagre, and have no especial value. They only corroborate the conditions pertaining to other parts of the head, and are due to derangement of the circulatory and nervous systems, an explanation of which will be found under "Eyes."

6. DIGESTIVE SYSTEM.

I. Jaws.

239. Pains shooting from frontal sinuses to jaws. No. 5, s. 166.

240. Shooting pains in both jaws. No. V., s. 132.

241. Sensation of stiffness in muscles of jaws. No. VIII.

242. Jaw had to be supported in order to speak. No. 3, s. 45.

243. Lower jaw dropping, leaving the mouth wide open. Nos. 3 and 24, s. 82.

244. His lower jaw dropped, and he did not articulate. Nos. 21 and XIV.

245. Lower jaw drooping, with thickness of tongue. Nos. 7 and 24, s. 55.

II. Lips.

246. Lips hot and dry. No. IX., s. 419.

247. Lips blue. No. 10.

248. Lips dry and rough, coated, as well as the teeth. No. I.

III. Teeth and Gums.

249. Numb pain and tenderness along the teeth and edges of the gums of lower jaw (only one case). No. 1, s. 5.

250. Pain in farthest teeth on right side, up towards temple. No. V.

251. Teeth coated. No. I.

IV. TONGUE, WITH ARTICULATION.

252. Tongue looks and to the finger feels moist, though patient complains of dryness of mouth. No. 1.

253. Tongue red and inflamed in the middle. No. 10.

254. Tongue red and dry; quivering when extended. No. 1.

255. Tongue stiff. Nos. 1, 3, 24, s. 45.

256. Coated tongue. No. IV.; s. 129.

257. Tongue coated yellow. No. V.

257(*). Tongue coated whitish-yellow. No. VI.

258. Yellowish-white coating of the tongue, with fetid breath. No. IV.

259. Tongue coated thickly white. No. IX., s. 279.

260. My speech was somewhat affected. No. 15.

261. Tongue so thick he could hardly speak. No. 7, s. 55.

262. As if tongue was too large, with thick voice. No. VIII.

263. Muffled speech. No 20, s. 9.

264. Partial paralysis of tongue. No. 14.

265. Could not utter an intelligible expression; tongue felt like some foreign body clogging the mouth. No. 12.

266. Ineffectual efforts to articulate. No VIII.

267. He could not articulate. No. XIV., s. 244.

268. He wrote with a pencil; being unable to speak. No. 14.

V. Mouth.

269. Dryness of mouth. No. 1, s. 252.

270. Some keep moistening the mouth with water for hours after discontinuance of the drug. No. 1.

271. Mouth dry, taste bitter. No. IV., s. 129.

272. Mawkish taste in mouth. No. IV.

273. Astringent sensation in mouth. No. IV.

274. Fetid breath. No. IV.

275. Froth at the mouth. No. 9. s. 54.

276. Foaming freely at the mouth (fatal case). No. 16, s. 391.

277. Sanguineous brown mucus ran out of the mouth. No. 10.

278. Paralysis of muscles of mouth continuing some hours. No. 20, s. 9.

VI. Salivary Glands.

279. Often through the day he found the saliva colored yellow as if from blood, and during latter half of the day a disgusting putrid taste in breath,

longing to rinse the mouth or to spit out. Tongue coated thickly white. No. IX.

VII. Throat and Deglutition.

280. Painful dryness of fauces. No. IV.

281. Violent burning in gullet from mouth down to stomach. No. 10.

282. Dryness and burning in throat; at times intolerable. No. 10.

283. Difficulty in swallowing from paralysis of the glottis. No. VIII., 26, s. 29.

284. At 12.30, while sitting at his studies, rising up of tasteless semi-fluid matter up the gullet, with heaving, and a sensation as if something were sticking in the throat, only less painful. No. IX.

285. Spasmodic sensations and cramp-like pains in gullet. No. 10.

286. Complained of choking. No. 13.

287. Pushed his fingers into his throat, trying to tear it open. No. 13.

288. Could not swallow, but rallied a little after stimulating enemata. No. 9.

289. Attempted to give an emetic of sulphate of zinc, but owing to difficulty of swallowing could not get enough down to produce emesis. No. 3.

290. In a few minutes my assistant returned and

said that Mr. —— was dying, and it was with great difficulty that he got him to swallow the emetic, which had not acted. No. 7.

291. Paralysis of muscles of mouth and throat, gradually increasing till deglutition became impossible. No 20.

VIII. Stomach and Digestion.

292. Alternate increase and loss of appetite, slight nausea, sour eructations. No. IV.

293. Nausea. No. VI., s. 73. 142. 305.

294. Considerable nausea, with inclination to lie down. No. 17, s. 20.

295. Aggravation of suffering by food and (especially warm) drinks. No. 10.

296. Stomach-ache. No. IX., s. 214.

297. Nausea and vomiting. No. 19.

298. Slight heartburn. No. IX.

299. Eructations with insipid fluid. No. IX.

300. Gastric oppression, obliged to slacken his clothes; then a sort of colic in the left side below the navel, as if stool would soon follow. No. IX.

301. Rising of semi-fluid matter in the gullet, with heaving. No. IX.

302. Burning in the stomach extending up to mouth. No. VIII.

303. Rumbling and dull pains in the epigastrium, relieved by expulsion of flatus. No. IV.

304. Nausea accompanied by dimness of vision. No. X., s. 117.

305. In two hours after taking dose, patient complained of pain in stomach, nausea, and dimness of vision. These symptoms were soon succeeded by great relaxation, ineffectual efforts to vomit, and free perspiration over the body. No. X.

306. He was sick, yet vomited but little. No. I.

307. Was very ill, want to vomit but cannot. No. II.

308. Vomited, but passed through the bowels. No. II.

309. Cramp-like pain in the epigastrium, which rapidly subsided, leaving a constricted sensation. This was followed by sensation of burning and heat in the stomach. No. X.

IX. Abdomen.

310. Over-fulness of abdomen. No. IX., s. 300.

311. Tenderness of abdominal parietes. No. VIII.

312. Movement of flatus in lower bowel. No. V.

313. Heartburn, slight, at noon, with pain in the scrobiculus cordis during the walk. No. IX.

314. Slight pain in left hypochondrium. No. VI.

315. Pulsative pains in left hypochondrium. No. X.

316. Dull pains in abdomen. No. IV.

317. Rumbling and rattling in bowels, with escape of flatus upward and downward; periodic pains in abdomen, with yellow diarrhœa. In the evening, pain commencing in left groin. No. V.

318. Next he observed a dull aching in the umbilical region, which lasted till he got up. No. VI.

319. A sort of colic in the left side, below the navel, as though stool would soon follow. No. IX., s. 300.

320. Slight colic, as if for stool. Eructations, accompanied by discharge of an insipid fluid. No. IX.

321. Colic. No. IX., s. 214.

322. Dull pain in abdomen, which became very violent towards morning; similar pain in region of sacrum and loins. No. VI.

323. In the evening, colic pains under the navel down by the scrotum, caused by wind and relieved by its escape. No. IX.

324. Continued pain in the scrobiculus cordis and eructations; when sitting, pulse 72. No. IX.

325. When lying down, pain under floating ribs of left side, suddenly as if thrust with a sharp instrument. No. X., s. 148.

326. Sleep disturbed by lancinating pains in abdomen, relieved by copious discharges of flatus. No. IV.

327. Sharp pains in bowels, with stools of light creamy color and pappy consistency. No. IV.

X. Rectum and Anus, with Defecation.

328. Frequent discharge of flatus upward and downward. No. IX.

329. Threat of diarrhœa. Stool after breakfast as yesterday. No. IX.

330. At 9.30 A. M. a soft bilious stool, as if diarrhœa were threatening. The latter renewed at noon when he heard exciting news, and latterly when walking. No. IX.

331. Exciting news caused, as he thought, urgency to stool as yesterday. No. IX.

332. After breakfast, pappy stool of dark yellow color. No. IX.

333. After dinner, second stool, consistent. No. IX.

334. Dark yellow stool after breakfast. No. IX.

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335. Bilious stools, otherwise no other symptoms of moment, except aggravation of previous ones from same drug. No. IX.

336. At 11 A.M., after the ordinary evacuation, another stool, passing tediously, with an after-sensation as if there were more to pass, and over-fulness of abdomen. No. IX.

337. Though the stool is soft, there is some difficulty in passing it, as if the sphincter resisted it too powerfully. No. V.

338. At 10 A.M. five drops; in a few minutes a stool, at first consistent, then pappy, then homogeneous; previous to this, escape of flatus all morning. No. IX.

339. Insufficient stool. — tea-colored, half-colored stool. No. IX.

340. Stools of light creamy color and pappy consistency. No. IV., s. 327.

341. Yellow diarrhœa. No. V.

Commentary.

The symptoms of gelsemium in the digestive tract point most strongly to its use in typhoid fever, and, in connection with some general symptoms, to typhoid states in other diseases. The yellowish-white tongue gives way in the second week to tongue red and

inflamed in the middle and "tongue red and dry, quivering when extended."

Nausea, dull pains in stomach, tenderness of bowels, rumbling and rattling of flatus, slight colic, over-fulness of abdomen, yellow diarrhœa, stool of light creamy color and pappy consistency, are characteristic symptoms of this disease, and its use is best indicated when there is general torpor and a predominance of nervous symptoms. For the paralytic sequelæ of typhoid fever and diphtheria, gelsemium is a most admirable remedy, the post-diphtheritic paralysis of throat being a common occurrence which, as well as other general motor paralyses, yields readily to this remedy.

7. URINARY ORGANS.

I. Urine.

342. Urine at times clear and limpid, at others milky and turbid. No. IV.

343. Frequent emission of clear and limpid urine, with seeming relief to dulness and heaviness in head. No. IV., s. 128.

344. Headache relieved by copious urination. No. IV., s. 128.

345. The effects of gelsemium were dissipated in a few hours; as I have remarked an augmented

secretion of urine, I suppose my kidneys eliminated the drug. No. III.

346. In nearly every instance the profuse emission of watery urine was accompanied by transient chilliness, tremulousness, and an evident alleviation of the sensations heaviness of the head, dulness of mind, and dimness of sight: several persons who made partial provings for me noticed the same with the alleviation. No. VIII.

347. Urine very much increased. No. VI.

II. MICTURITION.

348. Agreeable sensation during micturition along the course of the urethra. No. IV.

8. GENITAL ORGANS.

349. In connection with general prostration connected with diuresis, there was always much flaccidity, with coldness of the genital organs. No. VIII.

350. Redness, without pain, about the course of the urethra. No. IX.

351. Small red spots on edge of prepuce; are irritated and reddened all around. No. IX.

352. A seminal weakness, formerly removed by Conium, returned during this proving, and was the chief reason why I discontinued it. No. VIII.

353. Pain from region of navel to scrotum, relieved by escape of wind. No. IX., s. 323.

354. In afternoon and evening, some sensitiveness of right testicle; then drawing pain, extending into both groins and hypogastrium, followed by discharge of flatus, followed by alleviation of pain. No. IX., s. 323.

355. "Pain in head, which was of heavy pressing nature, would at times disappear, the concomitant symptoms being at the same time ameliorated, and *severe, sharp, labor-like pains would set in in uterine region, extending to back and hips.*" These symptoms alternated with those detailed under No. 11, s. 124.

356. Emission, without erection. No. VI.

Commentary.

Gelsemium is exquisitely homœopathic to hyperæsthesia of the bladder, whether this is occasioned by sexual excess or onanism; also to the excesses of old men, which are dependent upon weakness of the sphincter vesicæ, or possibly, as Foster would have us think, upon an enervated condition of the walls of the urethra. It would also seem that it should be serviceable in that irritable condition of the bladder occasionally met with in the early months

of pregnancy. Impotence and spermatorhœa, occasioned by self-abuse, are attended by symptoms which are almost identical with those found in this proving. In chordee or in spasm of the bladder, for the relief of which this drug is in good repute, we must make use of the antipathic or physiological action of gelsemium. Likewise, in spasmodic dysmenorrhœa and spasmodic contraction of the os uteri in labor, and threatened miscarriage, we should expect favorable results from this remedy in appreciable doses, though the first of these conditions seemed to have been occasioned by its administration. Whether the appearance of small, red, and irritated spots of the prepuce were the result of gelsemium, or a mere coincidence, would be difficult to determine. If the former is true, — and the skin symptoms seem to prove it, — then gelsemium might be useful in herpes præputialis.

9. RESPIRATORY ORGANS.

I. Nose.

357. Creeping in nostrils, afterwards bloody mucus in nose. No. IX.

358. Sneezing, followed by tingling, with sense of fulness in nose. No. IX.

II. Larynx and Trachea, including Voice and Cough.

359. Burning in larynx and down in chest under the sternum. No VIII.

360. Voice thick, as if tongue was too large. No. VIII.

361. Voice thick and guttural. No. 3, s. 45.

362. Cough from tickling and dryness of fauces. No. VIII.

363. Partial paralysis of glottis. No. 14.

364. Paralysis of epiglottis. No. 20, s. 29.

III. Bronchi and Lungs with Respiration.

365. The respiratory centre is undoubtedly affected, though not so much in man as in the lower animals. No. 1.

366. Dyspnœa. No. I.

367. Sudden sensation of suffocation, as in hysteria. No. VIII.

368. Inspirations long, with croupy sound. No. VIII.

369. Respiration almost imperceptible. No. 1.

Slow breathing and slow pulse (primary),

followed by rapid breathing and quick, weak pulse (secondary). No. VIII.

371. Extraordinarily great difficulty in breathing, with an agonizing sensation of fulness and pressure on the chest, and great chilliness; limbs cold, pulse slow and labored. No. X.

372. Deep inspirations, with numbness and sleepiness. No. 7, s. 101.

373. Very great uneasiness from threatened suffocation; constant longing for fresh air; sounds of respiration weak and undecided. No. I.

374. Sighing respiration. No. VIII.

375. Breathing unnaturally slow. No. VIII.

376. Heavy and labored respirations. No. VIII.

377. Breathing slow, sighing at times, sobbing with unconsciousness. No. 8.

378. Slow breathing, with rapid pulse. No. VIII.

379. Inspirations were of a sighing, catching character. No. VIII.

380. Expirations sudden and forcible. No. VIII.

381. Arose struggling for breath. No. 14.

382. Respiration 40, entirely thoracic. No. 40.

383. Respiration gasping; 34 per minute. No. 13.

384. Breathing stertorous and very imperfect. No. 3, s. 82.

385. Irregular breathing and slow respiration. No. 5, s. 427.

386. Respiration somewhat diminished in number. No. 7, s. 55.

387. Spasmodic breathing. No. 7, s. 190.

388. Fitful pains in the muscles of the chest. No. V.

389. Short fits of pain in upper part of right lung, passing on a deep inspiration from above downwards (this pain is one of the prominent symptoms). No. V.

390. Difficulty of breathing came on with oppression of præcordial region; difficulty of breathing continued rapidly to increase, consisting of a number of short, rapid inspirations, followed by three or four prolonged gasps; respiration now apparently ceased. No. 20, s. 70.

391. M—— hurried up from the basement, came into my room, breathing very hard, exhibiting in her countenance intense fear, and exclaiming, "Oh, doctor, I'm dying! I'm dying! Do something for me!" She attempted to lie down on the bed, but her head barely touched the pillow when she sprang up convulsively, calling out in a loud whisper, "My breath! my breath!" She clapped her hand across her breast rapidly, and seemed unable to retain one position for more than a few

minutes. Finding that the pulse was below forty, and the extremities cold, I resorted to stimulants. She rallied for a few minutes, then struggled, as for breath, and cried out. Presently she was taken with an excruciating chest pain. In a suffocative spasm, she sat down upon the floor, went into an apoplectic stupor, foaming freely at the mouth, and died within ten minutes. No. 16.

392. Stertorous breathing, like one in apoplexy, with coma and convulsions, followed by rapid breathing, collapse, and death (poisoning in dogs). No. VIII.

IV. Walls of Chest.

393. Burning in chest under the sternum. No. VIII.

394. Agonizing sensation of fulness and pressure on the chest. No. X.

395. Sensation of soreness in chest when coughing. No VIII.

396. Extremely violent pressure on lungs, and dyspnœa. No. I.

397. Pain behind the fifth rib toward left edge of sternum, relieved by eructations. No. IX., s. 94.

398. Muscles of respiration seemed paralyzed. No. 20, s. 390.

399. Excruciating chest pain. No. 16, s. 391.

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Commentary.

Taking into consideration only the record of provings here presented, the symptoms under section I., the nose, are neither sufficient nor characteristic enough to suggest, by themselves, any particular usefulness. It is, however, quite the reverse with the symptoms under section II. Here we find certain definite conditions presented with unusual clearness. Symptoms 360 and 361 showing alteration of the voice may be, and very probably are, dependent on the condition referred to in symptoms 363, 364; viz., "partial paralysis of glottis"; and it is well known that paralysis of the glottis and tongue are among the earliest symptoms produced by appreciable doses. This satisfactorily explains the acknowledged usefulness of this drug in post-diphtheritic paralysis of the pharyngeal and laryngeal muscles.

In aphonia, from deficient innervation of the glottis, or in functional laryngeal weakness from any cause, such as exhaustion from over-use of the vocal cords, this remedy fairly competes with *causticum*.

The next division, section III., is one of special interest; more so perhaps to the experimental physiologist than to the practical therapeutist, whose prime object in the study of this or any other drug is to find how most advantageously to utilize, for the

benefit of the sick, nature's medicinal agents. The symptoms under consideration, from 366 to 392 inclusive, picture a condition that coincides remarkably with the results produced by experiments on animals, and supports the statements made in the introductory chapters, that *gelsemium* is "pre-eminently a respiratory poison"; that *gelsemium* "in animals primarily affects respiration"; that it "reduces the frequency of the respiratory act"; that it "acts particularly upon those parts which preside over the rhythmical respiratory movements," etc.

The condition forcibly suggested by these symptoms is, in a word, dyspnœa. The different provers use, as is natural, different phrases to express varying degrees of the same difficulty; but dyspnœa, of greater or less intensity, is a symptom of such frequent occurrence as to be one of the marked features of the pathogenesis of gelsemium. If paralysis of respiration is not, as a rule, produced quite as readily in man as it is in animals, it is an effect none the less sure if the drug is "pushed," and the pathological process in man and in animals is the same, viz., paralysis of the respiratory centres; the disturbance is central, no disorganization of lung tissue being discoverable. With this drug, as with *opium*, the respiration in fatal cases comes to a stand-still some time before the heart ceases to beat.

Symptom 391 is a marked example of the power the drug possesses, the "apoplectic stupor" being the result of the insufficient oxidization of the blood, apnœa being the immediate cause of death.

A hint might be taken from the experiment on a dog cited on page 19, in which a fatal result was averted by performing tracheotomy, and resorting to artificial respiration until the poison was eliminated. Under similar circumstances, other means failing, this operation should not be left untried.

What *gelsemium* in "full doses" is capable of doing in the healthy human or animal organism is well demonstrated; experiments and accidental poisonings have settled the question, certainly in regard to the organs of respiration; but what use can be made of the knowledge thus obtained?

Paralysis of the lungs as a primary condition has not yet been observed; it may occur, however, in connection with, or as a result of, other diseases, *e. g.*, capillary bronchitis (catarrhal pneumonia) of the aged and feeble, or of children; but here we can regard *gelsemium* only as an ally in treatment; the field is already well occupied by a drug — *antimonium tartaricum* — that is exquisitely homœopathic, not only to the local inflammation, but to the general condition of prostration and respiratory depression. (*Laurocerasus.*)

In asphyxia: as from noxious gases, *gelsemium*, though being symptomatically homœopathic, might be used; but here again its claims to our confidence are hardly strong enough to warrant its use in preference to stimulants and artificial respiration. It might be used with confidence in cases where long-continued forcible expiratory efforts, such as paroxysms of whooping-cough, excessive exertions at lifting or pulling or voluntary blowing, tend to excite an emphysematous condition of the lungs by weakening the bronchial ramifications and air vesicles, and destroying their natural elasticity, provided no tissue metamorphosis has already taken place. *Gelsemium* has an antipathic relation to spasmodic asthma, in which relation it would seem preferable to the narcotics ordinarily employed, as its action in appropriate dose is more local than general, the mind remaining unclouded long after the lungs have been affected.

Section IV. presents nothing new. It only adds to the testimony given, the quality being the same, symptoms 391, 396, 398 belonging to the picture already given. Symptoms 397 and 399, in conjunction with symptoms 388 and 389, are the only indications of pain in the respiratory tract, and are suggestive of pleurodynia and intercostal neuralgia.

10. CIRCULATORY ORGANS.

I. Heart and Precordium.

400. Oppression of precordial region, with difficulty of breathing. No. 20, s. 390.

401. Stitching sensation in region of heart. No. VIII.

402. At 11 A. M. cardialgia, with confusion of head. No. IX.

II. Pulse and Circulation.

403. No particular effect on pulse. No. 1.

404. Pulse regular and full. No. 18.

405. Pulse strong and full, about 100. No. 40.

406. Pulse 72. No. IX.

407. Derangement of circulation, as shown in fluctuation of pulse from 70 to 120. No. IV.

408. Quickened circulation. Pulse accelerated from 77 to 96 beats after third dose. Nos. 21, XIV.

409. Accelerated pulse. No. X.

410. Pulse regular, from 80 to 90. No. 14.

411. Pulse 100 per minute, regular, but weak. No. 3, s. 82.

412. Pulse 80 to 90. No. 14.

413. Pulse at first too free, yet weak and vacillating, about 100 per minute. No. I.

414. Pulse 130. No. 40.

415. Pulse rapid and feeble. No. 12.

416. Pulse very rapid, small and weak. No. 8.

417. Pulse full at 80. No. IV., s. 129.

418. At 11 A. M., pulse when sitting, 76; on lying down again, pulse 54 to 60; when sitting up, 64 to 68; in the evening 72, when sitting and normally full and strong. No. IX.

419. At 11.30 A. M., after writing awhile, pulse 64 to 68, palms hot and dry, lips same. No. IX.

420. Pulse slow and labored. No. X., s. 371.

421. Weak pulse. No. 19.

422. Pulse slower and weaker. No. 13.

423. Slow pulse, followed by quick, weak pulse. No. VIII., s. 370.

424. Within a few minutes (sometimes two or three), after a dose of one to four drops of tincture, a marked depression of the pulse is observed, with a diminution of 10, 15, or 20 beats per minute; but this only in a state of rest. When moving, it is very variable. No. 11.

425. Pulse below 40, with cold extremities. No. 16, s. 391.

426. Directly after the reaction has followed the

chill, the pulse rises as far above the normal state as it had previously been below. No. II.

427. At the expiration of about five hours, pulse was found feeble, irregular, and sometimes intermittent. There was great prostration, with irregular breathing and slow respiration; skin dry, extremities cold; pupils expanded, and insensible to light; eyes fixed, and inability to raise eyelids. No 5.

428. Pulse small and feeble. No. 7, s. 55.

429. Pulse almost imperceptible. No. 7, s. 190.

430. Pulse a mere flutter, and had almost ceased with unconsciousness; up to the time of my becoming unconscious, pulse regular and rather full. No. 20, s. 70.

431. Heart beating feebly and slowly; pulse imperceptible. No. 9, s. 54.

432. Capillary circulation poor. No. 40.

III. Temperature.

433. Slight chilliness all day. No. VI.

434. General uneasiness, with chill after breakfast. No. VI.

435. Chilliness, especially along the spine. No. II., s. 130.

436. Chilliness and chills running up the back, from the loins to nape of neck. No. IV.

437. Feels very chilly all day. No. VI.

438. Surface cold and congested. No. 7, s. 1.

439. Chilliness, with vertigo, headache, and coated tongue; cold extremities; inclination to hug the fire; with chills following each other in rapid succession from sacrum to base of occiput. No. IV., s. 129.

440. Extremities cold. Nos. 36, 5, s. 391, 427.

Commentary.

We pass over the symptoms under section I., the heart and præcordium, because if these three symptoms are the most reliable and characteristic ones that have been produced, we must conclude that the drug exercises but little power over the heart, although in this connection it is necessary to consider the following section, which treats of the pulse and circulation. In attempting to analyze this section, it will be sufficient to direct attention to the more important points, without endeavoring to harmonize the many opposing statements or hide the many evident imperfections.

The section presents thirty symptoms. The pulse was not materially affected in five instances, as given in symptoms 403, 404, 406, 418, and 419, the last three being from a very carefully and satisfac-

torily reported proving. The pulse was accelerated in twelve instances, as recorded in symptoms 405, and 407 to 417, inclusive. It will be seen that symptom 412 is only a repetition of 410, and the "rapid and feeble pulse" of 415 became the "slower and weaker pulse" of 422, the case proving fatal. The pulse was accelerated after a previous stage of depression in two instances, — symptoms 425, 426. We find a retarded pulse in symptoms 420, 422, 424, 425, and 427 to 431 inclusive, — nine instances. A "weak pulse" occurred in one case after a dose of one and a half ounces of the fluid extract, symptom 421. In regard to the retarded pulse, — symptoms 422, 425, 431 (the last being common to three fatal cases), of three out of the nine, are from fatal cases; two others, 427, 430, approached a condition of collapse; and two more, 428, 429, were produced by a large dose, — half an ounce of fluid extract. There are then only two symptoms, 420 and 424, produced by small doses, from one to ten drops of the tincture.

We can learn nothing, however, from the doses employed, since a retarded or depressed pulse was produced by both small and large doses; large doses (thirty drops of the tincture and forty drops of the fluid extract) producing also an accelerated pulse: symptoms 410, 411. Other cases referred to do not

give the dose, and the expressions used by the provers to describe their sensations and conditions are too vague to be of any value. In regard to the temperature, we find only *sensations* of chilliness are recorded,—nothing more definite. What the thermometer would have revealed can only be surmised. Our conclusions, therefore, from the above symptoms must coincide with those already recorded on page 26, and we can only repeat:—

I. That *gelsemium* produces but little, if any, effect on the pulse.

II. That it does not affect blood pressure.

III. That it does not affect the temperature.

The above is not particularly suggestive, therefore, of any usefulness of *gelsemium* in affections of the circulatory system. Possibly its full power in this sphere is not yet known; and in consideration of the clinical reputation this drug possesses, it would certainly be well to institute further investigations with special reference to the circulatory organs.

11. SKIN.

441. At 8 A. M. discovered a painful pimple on left side of neck; has a circle the size of a pea; very much inflamed and red; never had the like before. No. IX.

442. An eruption of vesico-pustules, painless, but having no other analogy to measles, appeared on the inside of my thighs during my proving. No. III.

442(2). Two days after still observed two pimples, one in the region of the right corner of the os hyoides, the other on the anterior edge of the left temple over the brow. No. IX.

443. One pimple more, smarting like a wound when touched, on the left, near the larynx: first one aches less, more like a small ulcer on the skin. No. IX.

444. Papulous eruption on the face, very nearly resembling measles. Erythema of neck and face. No. VIII., s. 164.

445. At 3 P. M., whilst reading exciting news, a transient chill on the upper half of the body, especially on the top of the neck. No. IX.

446. Chilly sensation over the whole body at the same time every day. Yellow color of the skin; even the eyes yellow. Great prostration and emaciation, while he kept taking more every day for a week. No. V.

447. Directly after the chill comes a flying heat and prickling in the skin, rapidly followed by perspiration, which at times is profuse, and lasting even from twelve to twenty-four hours. No. II.

448. Skin livid and cold. No. 46.

449. Surface cold. No. 19.

450. Skin dry with cold extremities. No. 5, s. 427.

451. Skin warm and moist. No. 7, s. 55.

452. Hands, especially palms, hot and dry. Nos. IV., IX., s. 419.

453. Perspires easily on walking or other movements. No. IX.

454. Free perspiration over body. No. 5, s. 300.

12. BACK AND LIMBS.

455. Pain in region of sacrum and loins. No. VI., s. 322.

456. At supper-time, after writing, he felt thirst, faintness, and aching in the sacral and lumbar regions, also in the lower half of the left thigh, as if he had fever pains worse after eating. No. IX.

457. Chills, following each other in rapid succession from sacrum to base of occiput. No. IV., s. 439, 129.

458. During last night the same pain in the limbs; worse after midnight, abating during the day; the previous headache in the occiput; quivering of the abdominal muscles for about three minutes; dull pain in the lower lumbar and sacral regions. No. VI.

459. After breakfast sharp, shooting pain from right shoulder to vertebral column. No. VI.

460. Aching in the back, especially sacral and lumbar regions, since 3 A. M.; similar deep-seated pains both in the upper and lower extremities and all the joints. No. VI.

461. Soreness of trapezius muscle on moving. No. X.

462. Afterwards, when he left the warm room, aching on the anterior portion of the left trapezius muscle. No. IX.

463. Pains in the neck limited to the upper part of the sterno-cleido-mastoid, behind the parotid gland. No. V.

464. From large doses the arms became powerless, with loss of voluntary motion; sensation remained intact. No. VIII.

465. Spasmodic pains extending from the inner condyle of the humerus to the axilla. No. V.

466. Awoke about 3 or 4 A. M. with violent pains in both upper extremities and both calves, which seemed to be deep seated in the muscles; worse in the left arm and forearm. No. VI.

467. Sensation as if a galvanic current was passing down the forearms and hands; same in feet. No. X.

468. Weakness of muscles of arm.

469. Blunted sensations in hands and arms. No. 15, s. 2.

470. Pain in flexor muscle of right forearm. No. VI.

471. Early in the morning, sharp, shooting pains in the joint of the last phalanx of the right thumb; dull pains in the muscles of the right arm and shoulder; now and then in the left arm, calves and lower extremities. No. VI.

472. Pains in left elbow and knee, wrist and both ankles. No. X.

473. Pulsative pains in left hands and fingers; at same time in the right foot, — more severe in the ball of the great toe. No. X.

474. Itching on the elbows and forearms, aching in the left rectus muscle of the thigh, and drawing in the right calf. No. IX.

475. After writing for a few minutes, he had a cramp-like pain in back of the right elbow. During the evening, lasting pain in left thigh and both knees. No. IX.

476. At 9 P. M. pain in right wrist, of a dull kind, with great weakness of the part. The next day the pain diminished, but weakness continued. No. VI.

477. Pain in little and fourth fingers. No. V.

478. Flexors of hands and arms paralyzed, and

extensors nearly so. "I was incapable of using my hands. My legs did not suffer nearly so much." No. 15., s. 46.

479. Fatigue of lower limbs after slight exercise. No. IV.

480. Soreness in the gastrocnemii muscles, as if they had been beaten. No. IV.

481. Pain in limbs. No. IX.

482. Shivering of lower limbs for about ten minutes. No. VI., s. 78.

483. During the night pain in the limbs as usual, especially forearm and calves; also in the elbows and knees. All like the previous, only less violent. No. VI.

484. Feeling in the knee-joint as if the relative positions of the bones were changed and they would not act, as if from partial dislocation. No. IX.

485. At 5½ P. M. fifteen drops. In an hour rheumatic pain in the right knee and left side of the neck, the latter on lying down, the former on walking, soon passing off. No. IX.

486. Same rheumatic pains in the limbs, but not violent. No. VI.

487. Transient spasmodic pain on the inside of the thigh in walking. No. IX.

488. Awakened by pain in the limbs at 4 A. M. No. VI.

489. Drawing, severe, sore aching, which seems to proceed from the bones; heaviness; sensation like a burden in the limbs. No. VII.

490. Pain in lower limbs as if deep in muscles. No. VI., s. 138.

490@. Pains in left hip only to the joint, yet now and then on the thigh downwards; it is a sharp drawing pain, much aggravated by movement. No. V.

491. Pains by fits in the left lower extremity; violent shooting pain in the leg by fits, continually increasing in violence, midway between the knee and ankle. No. V.

492. Rheumatic pains in the bones and joints of the extremities and back, as last night. No. VI.

493. Last night no prominent symptoms except slight pains in all the muscles of the limbs. No. VI.

494. Very violent, tensive, spasmodic, contractive pains in the lower extremities, from the thigh down to the toes. The pains appear to proceed as much from the bones as the muscles. Nos. II., VII.

495. During the night, pain in the limbs; at 3 A. M. sharp drawing pain in the right calf; at 6 A. M. the same pain in the right wrist; at 7 P. M. dull pain in left thigh and under left scapula; at 7.30 violent aching in the left elbow; all day dull pains which change their situation. No. VI.

496. Pain in left ankle, with spasmodic contractions of the toes and drawing pains in them. No. V.

497. Paralytic feeling in knee and anterior tibial region. No. IV., s. 52.

498. Violent spasmodic pains in the whole of the right foot; during a walk and after it all the symptoms much aggravated; it seems as if he had no power over his limbs to make another step. The pains are always either above or below the knee. No. VII.

499. Limbs relaxed. No. 40.

500. Violent, tensive, and contractive pains in the left gastrocnemius, which do not go off in a sitting posture, as all the other pain in limbs. No posture and no position relieve them. No. VII.

501. Gait staggering. No. X.

502. Extremities cold. Nos. 5, 13, 8.

503. Limbs cold. No. X.

504. Hands and feet icy cold. Nos. 14 and 18.

505. Staggered and fell. No. 8.

506. Loss of motion in lower extremities. No. IV.

507. Limbs powerless. No. X.

COMMENTARY.

As in sensibility and motility we see that the paralysis is not complete, viz., it is motor and not

sensory. The symptoms of paralysis are not many, 464 and 478 in the upper and 497, 498, 506, and 507 in the lower extremities being the principal ones.

The pains complained of are more of a rheumatic nature, and for the most part superficial or muscular and not visceral. The nerves chiefly acted upon by this drug are the spinal accessory, the median and ulnar in the upper, and the great sciatic and its branches in the lower extremities. Attention is called particularly to symptoms 475, 476, and 485, as possibly indicating its use in writers' cramp, and to many of the symptoms of pain in the lower extremities as hinting its use in sciatica.

13. GENERALITIES.

508. General fatigue. No. X.

509. General failing of strength. No. IX.

510. Pains worse after eating. No. IX.

511. All pains aggravated by warmth of bed, and worse after midnight. No. VI.

512. Left side more paralyzed than right. No. 20.

513. Less feeble after walking about a little. No. IX.

514. Great feebleness. No. 19.

515. Erratic pains of rheumatic character. No. X.

516. Deep internal aching of muscles, relieved by movement. No. VI.

517. Great prostration and muscular weakness of lower jaw, eyelids, and muscles of arm. No. 3, s. 45.

518. Headache and giddiness; worse from touch, walking, and standing.

519. Great prostration and emaciation during the week he took the drug. No. V.