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Original Communications.

EARLY PARACENTESIS OF THE MEMBRANA TYMPANI IN THE TREATMENT OF ACUTE NON-SUPPURATIVE AND SUPPURATIVE CATARRH OF THE MIDDLE EAR.

BY A. PROUDFOOT, M.D.

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Read before The Canadian Medical Association, Aug. 26th, 1884.

Nothwithstanding that this operation was introduced by Sir Astly Cooper over eighty years ago I find that there still exists a popular belief among the laity, and even among otherwise well informed physicians, that perforation of the membrana tympani is necessarily followed by almost hopeless deafness.

I will therefore endeavor to show by this short paper, not only that this belief is erroneous, but that paracentesis is in itself a comparatively harmless operation. And that in its *early* performance we have, in cases of acute non-suppurative and suppurative catarrh of the middle ear, a most valuable and reliable means, not only of relieving the sufferings of the patient, but of cutting short the attack, and bringing about a favorable termination of the disease.

In 1801 Sir Astly Cooper introduced the operation to the profession by the report of four successful cases, before the Royal Society in London. The publication of these cases by the great British surgeon soon led to its performance by many surgeons upon the continent, and the operation became so fashionable that almost everyone whose hearing was at all impaired had his drums pierced, and even deaf mutes submitted to the operation. Cooper was so over-run with deaf patients that after performing the operation some fifty times, where the benefit was either nil or of but short duration, and finding that his reputatioh as a surgeon was suffering, finally refused to treat any more deaf people.

The only rule which Sir A. Cooper laid down for the operation was closure of the eustachian tubes, preventing the free passage of air into the tympanum:

1st. By a common cold producing congestion about the orifice of the tubes in the pharynx.

2nd. Ulceration of the pharynx from,

(*a*.) Scarlet fever.

(*b*.) Syphilis. The resulting cicatrix causing closure of the tubes.

3rd. Extravasation of blood into the tympanum.

These observations of the great surgeon are wonderfully correct, when we consider that the valsalva method was the only means then known of proving the permeabilty of the eustachian tubes.

First let us consider those cases of acute non-suppurative inflammation of the middle ear with accumulation of mucus or serum within the tympanum.

SYMPTOMS.—Ear-ache, fullness, throbbing sensation referred to the deep structure of the ear and tinnitus aurium.

On inspection the membrana tympani will generally be found congested, vascular and some-

what bulged outwards, and the hearing is more or less impaired. In most cases the throat is sore and the pharynx deeply congested. Usually in this disease pain is the first symptom complained of; but previous to its setting in the patient may have been aware of a certain fullness in the ears, with slight dullness of hearing, and perhaps a certain stiffness about the muscles of the throat. The pain may vary very much in different persons; in some cases I have seen the disease go on to suppuration, without being severe enough to prevent the patient from attending to his business, while in others (usually those of a nervous temperament) the pain has become so severe in a few hours as to cause even a strong man to cry like a child. Fever is a prominent symptom in this disease, and the temperature may rise above one hundred degrees, (100.)

CAUSES.—Among the causes of this disease may be mentioned cold, the introduction of water into the external meatus while swimming (especially salt water), coryza, small-pox, scarlet fever and measles, the accidental introduction of water into the middle ear by the use of the nasal douche or other means.

In the treatment of this severe form of inflammation we have first to relieve the pain, reduce fever, and, if possible, prevent the extension of the disease to that more severe type, acute suppuration of the middle ear, with spontaneous perforation of the membrana tympani.

For the relief of pain, especially in children, perhaps no remedy will give more relief than a continuous stream of (not warm water), but water just as hot as can be introduced into the meatus without scalding the patient. The best method of introducing the water is by means of an aural douche. A syphon formed by a piece of small elastic tubing will answer the purpose very well.

Should the injection of hot water and the administration of a full dose of morphia prove insufficient to give relief we must then have recourse to the local abstraction of blood. This may be accomplished by leeches applied to the tragus, or by Hortloupe's artificial leech. But the treatment which, in my hands, has proved the most successful and satisfactory is paracentesis of the membrana tympani.

Therefore, in every case of acute inflammation of the middle ear, in which the pain does not immediately yield to hot water and a full dose of morphia, say ⅓ to ½ a gr., for an adult, and where the membrane is red, swollen and prominent, I consider it but loss of time to employ other means for the abstraction of blood,—I at once puncture the membrane.

A case which will not yield to the above-named remedies, will, in all probability, cause spontaneous rupture of the membrane. Why not anticipate this by a neat puncture? It will at once relieve the tension of the parts, by the flow of blood from the membrane, and the escape of mucous or other fluids from the tympanic cavity.

The pain experienced during the operation is trifling, and the relief almost instantaneous. The bleeding should be encouraged by the warm water douche, which may be used from time to time, should there be any recurrence of the pain. And here let me remark, that I do not approve of the application of poultices, which are so commonly used in these cases. The chief thing to be dreaded in these acute cases is the formation of pus, and I have no hesitation in saying that they are almost sure to bring this about. Poultices should only be used as a "dernier resort," and, when used, they should be small enough to be introduced some distance into the meatus. If there is tenderness over the mastoid process a poultice may be placed over it, too, but it should never be placed over the auricle, as it is apt to produce painful swelling in that region.

The following cases, the result of causes before mentioned, will illustrate the beneficial results of an early puncture of the membrana tympani: 1st From Cold.—C. B, æt 27, went for a long drive during the afternoon, and, as the day was mild, he substituted a felt hat for the fur cap he had been previously wearing. During the following night he experienced the most excruciating pain in the right ear, for which he dropped warm laudanum into the ear. This gave him very little relief, and he was unable to sleep during the remainder of the night. In the morning, when he consulted me, he was still suffering so as to scarcely be able to keep quiet, while I examined the ear. I found the membrana tympani very red, swollen, and bulging outwards. For treatment I used Politzer's bag, and finding that there was no perceptible change in the shape of the membrane I immediately perforated it in the lower posterior segment, close to the handle of the malleus. The pain was somewhat increased at the moment the puncture was made, but, after the escape of a few drops of blood and mucus, the pain was almost instantaneously re-

lieved. In this case it was not found necessary to give an opiate; there was some return of pain the first night, but it readily yielded to the hot-water treatment. After the second day the membrana was quite healed, the Eustachian tube became pervious, and the patient recovered without any diminution in the hearing.

2ND CASE.—Introduction of water into the meatus while swimming. J. H., æt 18, while swimming at Lachine got some water into the right ear, which he was unable to remove. The first night he experienced no particular inconvenience, except that he was slightly deaf of that ear. The following day the water ran out and he thought no more of the matter, until he was seized with pain in the ear, for which he introduced cotton, saturated with St. Jacob's Oil, which, as may be supposed, only increased his sufferings. The following day he came to me for treatment. I found the whole meatus somewhat inflamed from the St. Jacob's Oil, the membrana was red, vascular and swollen. The patient was unable to inflate the tympanum by the Valsalva method. I introduced the eustachian catheter and injected some air, but with no relief to the patient. I then perforated the membrana in its most prominent part; this was followed by a flow of thin, watery blood from the meatus. The tympanum was then freed from mucus by the Politzer bag, the meatus dried with absorbent cotton, and then moistened with a ten-grain solution of Argent. Nitr.

The patient was instructed how to practice the Valsalva method, should any fullness or pain recur in the ear. By the third day the membrana was quite healed, and the patient gradually recovered his hearing.

3RD CASE.—From corysa. Miss C., æt. 22, stated that she had been subject to frequent colds in the head, during which times she was occasionally annoyed by slight attacks of deafness, and shooting pains in the ears. During the last five or six days she had been suffering intensely, from what her physician called neuralgia in the left ear; and for which he prescribed laudanum and sweet oil, to be dropped into the ear. Finding that this treatment did not give the desired relief, and that the patient's sufferings were increasing, he advised her to put herself under my care. I found the membrana very congested and quite prominent. There was hypertrophy of the left tonsil and closure of the eustachian tube. I immediately perforated the membrana tympani. The patient experienced considerable pain at the moment and immediately fainted, but soon regained consciousness though she remained dizzy for some minutes afterwards. A drop or two of muco-pus appeared upon the edge of the wound the following day, but this was removed and the part touched with a twenty grain solution of argent nitre. In a week the perforation was quite healed, and there was no return of the pain. When I last saw this patient she was slightly deaf on the left side, probably from pressure of the tonsil on the orifice of the eustachian tube. I advised her to have the tonsil excised, but she did not submit to the operation.

4TH CASE—From scarlet fever. E. P., æt. 10, a month ago had scarlet fever with slight attacks of deafness. Her family physician advised her mother to call me in should the deafness continue. When I was called to see the child, her mother informed me that they had all been kept awake the previous night by the sufferings of the child. Although they had tried everything they could think of to relieve the pain in her ear, warm water seemed to be the only thing that gave her any relief. I found the membrana of the left ear greatly inflamed and bulging at one point, as if it were about to burst. And as the child was still suffering intensely from the pain I punctured the membrana, and encouraged the bleeding by injecting warm water, and in a few minutes I had the satisfaction of seeing the child almost free from pain.

I had to follow up the treatment in this case, by the daily use of Politzer's bag, and the child made a perfect recovery.

I have had many cases similar to the above, after measles, but never one the result of small-pox.

I will now give one or two cases in which I perforated the membrana tympani in acute suppurtive disease of the middle ear:

Case 1—J. H., æt 45, had suffered for some time from offensive nasal catarrh, for which he was in the habit of using a nasal douche with weak solutions of salt and water. He stated that the day before he had been using the douche, and had accidentally forced some of the solution up the eustachian tube into the right ear. Before morning he was attacked with severe pain in the ear. On examination I found the membrana bulging, and as it still retained its transparency I thought I could detect the shadow of a thick fluid, probably pus, which slowly changed its position on movement of the head forwards and backwards. The

skin over the mastoid process was decidedly red, and there was marked tenderness, when the process was percussed with the point of the index finger. I diagnosed the case as one of acute suppuration of the middle ear, and proceeded to make a large perforation in the membrana, which was followed by the escape of a few drops of pus—I then used Politzer's bag, repeatedly, until I had removed all the pus possible, from the cavity of the tympanum: I then ordered the patient a gargle of alum water, instructed him to syringe the ear several times a day, if necessary in order to keep it free from discharge, and to drop into the ear a four grain solution of sulphate of zinc. To apply ice over the mastoid process as long as any redness or tenderness remained.

I gave the patient 1-3 gr. of sulphate of morphia for the first few nights, to insure sleep. The patient came to me daily, for three weeks, when I used Politzer's bag, and thoroughly removed all pus from the tympanum, and then applied a 20 gr. solution of argent nitre. By this time the discharge, which had been very profuse, ceased, the membrane healed, and the patient shortly afterwards had his hearing quite restored.

CASE 2—Mrs. C., æt. 35, had been suffering more or less for ten days before consulting me with pain in the left ear and over the side of the head. Her family physician had prescribed large doses of morphia, and she had herself employed dry heat by means of a small bag of hot salt, which she found gave her some relief, but the throbbing and pain had increased until it had become almost unbearable. Her physician finally advised her to come to me, telling her that he did not know much about the ear. I found the walls of the external auditory canal somewhat swollen, and the membrana much inflamed; the mastoid process was also ademato us and painful.

I at once punctured the membrana, and followed precisely the same treatment as in the first case.

The patient experienced almost immediate relief from pain, and, although the ear was tender for a few days, she was able to sleep after the first night without an opiate, and in a month she quite recovered without the loss of hearing. I might go on and relate other cases, but I think that those which I have mentioned will suffice.

Within the last twelve years I have performed this operation a great many times, both in public and private practice, and I have yet to see a case where the membrana did not heal after the operation, or where it was not of decided benefit to the patient.

We may regard paracentesis of the membrana in acute inflammation of the middle ear in much the same light as we do iridectomy in glaucoma. It at once relieves the tension of the parts and generally prevents the extension of the disease to the labyrinth, or mastoid cells, which might take place before spontaneous rupture of the membrana could be accomplished by nature. I therefore draw the following conclusions:

First. That paracentesis is not a very painful or formidable operation.

Second. That in it we have a quick, safe and permanent means of relieving the patient, from, probably, the most agonizing pain to which mortal man is subject.

Third. That in it we have a most valuable and reliable means of cutting short the attack and bringing about a favorable termination of the disease.

Fourth. By it we have a valuable means of preventing the extension of the inflammation to the labyrinth and mastoid cells; by affording a free, exit to the pus; and a means of applying our remedies directly to the cavity of the tympanum.

2 PHILIPS PLACE.

RESULTS IN SOME SURGICAL CASES.

H. S. CUNNINGHAM, C.M., M.D., Indianapolis, Indiana, U.S.

1. Gustav Jonas, æt. 12, was kicked over the left eye by a horse. The skull was crushed in. I removed the pieces, leaving an irregular opening about the size of a silver twenty-cent piece. The membranes were intact, the wound heals kindly. There was no elevation of temperature at any time or delirium. He was about in ten days.

2. Mr. J. F., a carpenter by trade, in a fit of emotional insanity cut his throat with a draw-shave. I saw him three days after his attempted suicide, the trachea was almost entirely severed at the third ring from the cracoid cartilage, and the æsophagus was cut into on the right side, sufficient to admit of the spurting forth of a small stream of water at every effort of deglutition. I closed the wound with silver wire, and he completely recovered.

3. John Johnson, æt. 5, inhaled a grain of corn into the trachea. I operated upon him, assisted by my friend, Dr. Max Schiller. He recovered in three weeks.

4. Mrs. C. Hoffman, æt. 78, came under the care of my friend, Dr. Max Schiller, for strangulated femoral hernia. Taxis failed in reducing it. We operated, and returned the gut, but failed to return a large portion of the omentum. We cut off a portion, twisted the vessels, sponged it off, used carbolic spray, and returned it. The patient recovered in six weeks, and is well to-day.

5. Mrs. L. Hoff, suffered from femoral hernia for some years, but never wore a truss; she finally had strangulation, and suffered from great distress and vomiting, for twelve hours before calling for medical aid. Dr. W. B. Fletcher, present superintendent of the State Insane Asylum, assisted me in the operation. She was attending to her household duties in three weeks.

6. Shortly after returning to the U. S. from Montreal, Canada, a young lady, Miss M., called upon me to remove an unusually long steel hair pin from the bladder. She acknowledged having introduced it accidentally through the urethra while masturbating, she using the rounded end; the pin slipped from her fingers in her excitement. I was compelled to cut a small opening through the vagina and bladder to remove it. She recovered in two weeks.

7. Louisa Rapp, æt. 10, was accidentally shot, the calibre being 22; the ball entered the brain at the union of the occipital and parietal bones,—crown of the head. She was shot whilst stooping, the ball ranging backwards and towards the cerebellum evidently, from the position of both parties. The membranes as well as the tables of the skull were perforated; she only remained in bed five (5) days and in doors ten days. She never had any elevation of temperature, no vomiting or convulsions, and to-day—two years after the injury—she is enjoying good health.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, April 25, 1884.

DR. HENRY HOWARD IN THE CHAIR.

PATHOLOGICAL SPECIMENS.

Dr. R. L. MACDONNELL exhibited a *radius* found in the McGill dissecting-room, shewing an old Colles' fracture; also a *skull*, the parietal bones of which were very thin over the grooves for the middle meningeal artery. This was pointed out to be of medico-legal interest, inasmuch as a moderate blow on the side of the head might produce death by fracture of the bone and perforation of the vessel.

Dr. HENRY HOWARD said that the late Dr. Macdonell saved a cab-driver from the gallows by showing in court that the skull of the person whom he had struck on the head for refusing to pay him was abnormally thin in this region, death being caused as above.

Syphilitic Teeth.—Dr. MacDonnell showed a plaster cast of teeth from a boy who has been under his care for about two years suffering from well-marked symptoms of congenital syphilis.

Dr. SUTHERLAND exhibited the following:—

1. *Monstrosity.*—Drawing of a two-headed fœtus and skeleton of the same from Dr. Mullins of Hamilton. The child (male) had two heads, four arms, and two legs. The skeleton showed two separate vertebral columns converging at the sacrum, and two thoracic cavities, one abdominal.

2. *Hemorrhage into the Cerebellum.*—The right lobe of the cerebellum was torn up by the force of the blood. This specimen was removed from a boy aged 13 years, who, while apparently in good health, was suddenly seized with a convulsive fit, dying almost immediately.

3. *Brain of a Monkey.*—Showing the cerebellum fully covered by the cerebrum.

Dr. Sutherland also showed the *Skull and Brain of an Idiot*, the main features of which were as follows:—Of the skull: The capacity of the cranium comes under the group of microcephalic skulls. The bones of the face are large in comparison with those of the cranium, and slant forward. The horizontal circumferencc taken in a plane passing anteriorly through the ophryon and posteriorly through the occipital point, 17½ inches; arch of the vault from the ophryon to the occipital point, 10 inches; transverse circumference from one auricular point to the other, 10 inches; width between the malar bones, 3 inches. Orbits are comparatively large, 2 × 1½ inches. Superciliary ridges prominent. Nasal septum between them is narrow. The ophryo-alveolo-auricular angle gives a prognathic index. Temporal fossæ are deep, and ridges well marked. Basi-occipital process ascends very obliquely to articulate with the basi-sphenoid. Foramina at the base are comparatively large; the grooves for sinuses comparatively small. The brain has a low contracted appearance, short, greatest transverse diameter

being at the middle of the mass, and having a ratio to the length of 1 to 1½. Far from being concealed, the cerebellum projects behind the cerebrum to the extent of one inch, and forms a fourth part of the whole mass. In the base view the relative preponderance of the cerebellum is again the most striking feature—

Antero-posterior diameter of the cerebrum		5	inches
Hemispheric arch		6	"
Anterior curve (fiss. of frnt. lobe to fiss. Rol.)		3	"
Middle " (fiss. Rol. to par. occip fiss.)	right side,	1	"
	left "	1¼	"
Posterior " (par. occip. to fiss. of occip. lobe)	right "	1¼	"
	left "	1	"

The frontal region is short and pointed; the orbital surface but slightly marked. Temporal convolutions are large, and are continued backwards into the occipital lobes, which are exceedingly small, and cannot be definitely divided into their ordinary number of convolutions. The central lobe is exceedingly small. The parts which can be detected as actual convolutions are: Frontal parietal lobules—temporal, marginal, calloso-marginal, cuneate and præcuneate lobes. Less easily the orbital, occipital and central lobes—triradiate sulcus, corpora-striata and optic thalami. On the right side the fissure of Sylvius is continuous with the post-central and interparietal sulci. On both sides the calcarine fissure is represented by two parallel sulci separated by a ridge of convolutional substance better marked on the right side. Further development of the convolutions above and below would have concealed this ridge and left a single fissure. Cerebellum more highly developed than the cerebrum.

Dr. HENRY HOWARD made the following remarks on the brain demonstrated by Dr. Sutherland:—With your permission, Sir, I will read a copy of a letter I wrote to Dr. Richard MacDonnell bearing date September 16, 1883:

" I have a perfect recollection of the man that you spoke to me of. He was admitted into the asylum as a dangerous imbecile, a man with homicidal tendencies. When I first saw him I was struck with the peculiar shape of the head. It was conical. The apex of the cone appeared to be at the union of the sagittal and lambdoidal sutures. The os frontis ran back as if it formed a part of the point of the cone. The base of the cone was out of all proportion with the face, being nearly twice as large. The head and face formed two lines, and their bases united. The man's eyes were small and gray; he was what you might call pig-eyed. His walk was that of a man with locomotor ataxia. When he came towards you, you felt as if he would run over you.

Physiological symptoms.—He was generally very good-natured, but terribly impulsive; the slightest thing would rouse him into a fury, when he would froth at the mouth, and not be able to utter a word. At the best of times he spoke with hesitation, not impediment of speech.

" I know nothing of what disease he died of. It must have been a sudden death, as I never saw him in the Infirmary, and I see all the patients every week. I have no history of the man before he was admitted into the asylum. In your examination of the brain I would expect you to find the following conditions: Convolutions, particularly in the lateral and anterior portions of the hemispheres, flattened, with irregular and shallow fissures; the cells in their cortical substance (that is, of these convolutions) few and small,—in fact, teratological defect in the whole of the motor and inhibitory nerve centres. And why would I expect you to find this abnormal state? Because the man was a very low order of imbecile, but little intelligence and no power of controlling his impulses. I would expect to find some abnormal state of the Island of Reil, or the convolutions covering it, because of the hesitation in his speech. I would not expect to find much abnormality in the convolutions or gray substance in the posterior lobes of the hemispheres or sensory nerve centres, because I never found any symptoms of either naæsthesia or analgesia. There was such a want of equilibrium in the man's movements, and he was such a victim of impulse, I would expect to find a very abnormal state of the mecensephalon, particularly about the basal ganglia, such as the corpus striatum and optic thalamus. I would expect the cerebellum to be large, and not covered by the posterior lobes of the hemispheres. There may be other abnormalities in the mesencephalon, but those I have mentioned I would expect to find.

Yours always, H. HOWARD."

From the demonstration given you by Dr. Sutherland you will perceive that, guided by experimental and clinical physiology, I made a good diagnosis of the teratological state of this man's brain, so far as the examination has gone, the doctor not having cut into the brain or made a histo-pathological examination of it. I admit that, in diagnosing flat convolutions and shallow sulci, I was as much guided in forming my opinion from the shape of the cranium as I was from the man's peculiar hesitation of speech and conduct. Judging by the frontal and lateral convolutions of the anterior hemisphere, we may easily conclude that there was teratological defect in the Island of Reil. Neuro-pathologists tell us that in the normal brain there are forty-four convolutions, and that sixteen of these are situated in the frontal lobes. In this brain there are only thirty convolutions, and eight of these in the frontal lobes. Mind, at least as we know of it, being a phenomenon or force of matter,

the psychosis must be what the physiology of the matter, of which it is the phenomena or force, makes it. This you have well exemplified in the imbecile's brain before you—the whole mass of the man's brain resembling more the brain of an ourang-outang than that of an ordinary man. It is a hard matter to give a definition of sanity, insanity, and imbecility that would be acceptable to all, particularly to judges that have to adjudicate in criminal cases. The reason is obvious: Some consider the mind to be soul or entity, causa vera; others, like myself, look upon mind, as far as we know it, as a phenomenon or force of matter. What is sanity? I answer, it is an equilibrium of mental forces or phenomena, due to the physiology of physical organisms; and sanity or intelligence differs in degree, depending upon the physiological state of physical organisms. What is insanity? A physical disease, to be diagnosed by the person's psychosis and conduct, due to a loss of equilibrium of mental phenomenæ or forces, the result of pathological defect of physical organisms; and insanity differs in degree, depending upon the greater or lesser degree of the pathological defect of physical organisms. What is imbecility? It is a want of absence of equilibrium of mental phenomena or forces, due to teratological defect of physical organisms. Imbecility differs in degree, depending upon the greater or lesser degree of teratological defect in physical organisms. It is from the imbecile class that we get another class of society, viz., the criminal class, therefore the necessity of having the imbecile class cared for, but separated from society.

You perceive, gentlemen, that physical science naturally leads me to be a physiological psychologist; and I maintain that for physical effect there must be physical cause; therefore, that for all psychical phenomena or force there must be physiological cause. In the brain before you, taken from an imbecile, this truth is fully established. You may ask me, if mind is a phenomenon or force of matter, how is it that mind acts upon matter? I am sure that all nature's forces, which are phenomena of matter, whether organic or inorganic, not only act upon other forces, but react upon the cause. For example, you see it every day. Fire is a phenomenon of matter which acts on the very matter of which it is the force or motive. Atmospheric electricity or lightning is a phenomenon dependent upon the physiological state of the atmosphere. So does mind act upon the very organs of which it is the phenomenon, as well as it acts upon other organs. It is the antagonism of forces, when equal, that creates an equilibrium in nature, and not only in nature, but in our organisms. Therefore, as I have said, sanity is due to an equilibrium of mental forces, and insanity and imbecility to a loss of equilibrium of physical and mental forces. You will understand, then, that when I, or any other physiological psychologist, speak of the locality of the organ of intelligence being situated in the anterior hemispere of the brain, the motor organs in the lateral hemispheres, and the organ of consciousness in the posterior lobes, it is not meant by such statements to imply anything more than nerve centres with particular functions. It is not meant that such centres are independent of one another, or independent of other nerve forces. These terms are used for want of a better that would imply as much. The whole nervous system constitutes mind matter as well as the brain and spinal cord. All centripetal nerve forces, or forces running towards the centre by means of the afferent or sensory nerves, find their centres in the posterior lobes of the cerebrum; therefore this centre is called the organ of consciousness. But, should there arise any abnormal state of these afferent nerves by which the centripetal current would be cut off, there would be, so far, a loss of consciousness although the nerve centre might remain normal. Again, if there was an abnormal state of any of the efferent or motor nerves by which the centrifugal current would be arrested, loss of motion in the peripheral nerve would take place, although the motor nerve centre was in a normal state. So it is with all other nerve centres—the eye, the ear, &c. All nerve centres are dependent upon each other for the perfect working of organic forces, and when all are normal, there is an equilibrium of organic forces, and there is an intellectual man. But when any of these forces are abnormal, then there is a loss of equilibrium of forces, and a consequent loss of intellect to a greater or lesser degree, depending upon the abnormality of the affected organ. This is physiological psychology, or cause for effect, which is vastly different from the psychology of the past, which was based upon the supposition that mind was entity, or causa vera, and not what physical science or experimental philosophy has proved it to be, so far as we have any conception of it, a phenomenon or force of matter.

Our penal code is based upon the dogmatic *a priori* or speculative philosophy, which assumed that mind was entity. Hence the uselessness and absurdity of a physiological psychologist pleading before a judge of a criminal court. The ontological psychologist and the physiological, or experimental psychologist, look upon crime from two different standpoints; therefore they never can come to the same conclusion as to cause and effect.

Since I wrote the foregoing I received the April number of the CANADA MEDICAL AND SURGICAL JOURNAL, and in it perused with great pleasure, and, I hope, profit, a letter from Strasburg, over the signature "T. W. M.," in which the following occurs: "Professor Solly, before, perhaps, the most crowded house of the whole semester, detailed results of his latest experiments on the cerebrum. Solly opposes the theories of Hitzig and Ferrier with the deepest conviction that they are baseless. His results are very striking, and I doubt if it is possible for anyone to see Solly operate, remove a very considerable part of the fore-brain, and then note the results in the dogs, and still believe in the Hitzig-Ferrier localization theories."

You see in my remarks I have been anticipating "T. W. M." who, it appears to me, with Solly, misunderstands these physiological psychologists, Hitzig and Ferrier, and no matter what may be the result in dogs that have had a part of the fore-brain removed, it would be far from settling so important a question. "There may be localization, and this Solly admits, but not as we have heard of it as yet." Most undoubtedly there is localization, but not in the manner that Solly is looking for it; when he takes a wider view of the physical phenomena of force he will find it. Again, "T. W. M." says, many suppose the localization hypothesis derives powerful support from clinics and pathology, from symptoms and morbid anatomy." Most undoubtedly there are many who believe it, and with good reason; see the brain before us this evening; morbid anatomy confirms the truth of the opinions formed from symptoms and clinical observations. No doubt but that there has been some wild writing upon the localization hypothesis, and that great misunderstanding has arisen from our terminology, nevertheless there must be physical cause for physical effect, and the effect must depend upon the physiology of matter, and our duty is, where we see effect, to search for, and, if possible, find out cause.

Stated Meeting, May 9, 1884.

T. A. RODGER, M.D., PRESIDENT, IN THE CHAIR.

The following pathological specimens were exhibited:—

Aneurism of the descending Aorta—Erosion of Vertebræ—Pressure on Left Bronchus—Carnified Left Lung. Dr. GEO. ROSS exhibited the specimen and narrated the case.

The specimen consisted of a large aneurismal sac, occupying the descending portion of the thoracic aorta. The posterior wall of the pouch had been absorbed, and laid bare the bodies of several dorsal vertebræ, which were also considerably eroded. The left bronchus had been compressed, and the corresponding lung was airless and carnified. The aortic segments presented a sclerosed and contracted appearance, and were inefficient. The lining membrane of the aortic arch extensively atheromatous.

The history of the case began with an attack of acute left-sided pleurisy more than two years ago, for which he had been attended by Dr. Ross. Physical examination at that time showed only the usual signs of pleuritic inflammation, and of incompetency of aortic valves, with consecutive changes in the left side of the heart. Aneurism was not suspected. A year later he consulted Dr. Blackader, who referred him to Dr. Ross once more, he believing that further organic disease existed. After recovering from his pleurisy, the patient had continued to suffer from persistent pain in the left side of the chest, and shortness of breath had become aggravated. Physical signs were: dullness over whole left lung, and respiratory sounds distant and feeble over same area. Double basic cardiac murmur. Tracheal traction evident. Aortic aneurism diagnosticated. Subsequently there were developed well-marked neuralgia of 5th, 6th and 9th intercostal nerves, which could be traced out by exquisite superficial tenderness; also a remarkably strong, heaving pulsation at the xyphoid and neighboring parts, apparently lifting the heart itself against the chest. The addition of these signs allowed the aneurism to be placed with certainty in the descending part of the aorta. He died with symptoms of bronchitis and increasing asphyxia.

Cast from Membranous Dysmenorrhœa.—Dr. GURD exhibited what he thought might be a cast from a case of membranous dysmenorrhœa. The specimen was quite fresh, having been ejected from the vagina that morning. The patient, æt

25, has been married two years; no children. For past seven years has suffered greatly during menstruation, but says what she lost has always been fluid blood with the exception of one occasion, about a year ago, when, after "missing" three months, and while at the water-closet, felt as if some small mass had come away. During the night before expelling the above cast, patient had had agonising pains for several hours. She had not seen anything for two months. The cast was the shape of the interior of the uterus, and weighed about three drachms. It was of a soft, membranous consistence, and easily torn.

Dr. TRENHOLME thought, from the history of the case and from its appearance, it was the decidua of conception.

Dr. GURD mentioned that the appearance exactly corresponded with what Dr. Thomas of New York describes as being a true membranous dysmenorrhœa cast, viz.: "External face soft and irregular, with perforations answering to opening of the utricular follicles. Inner face smooth, and feeling like mucous membrane."

Dr. GARDNER said that it did not look like the product of conception.

The specimen was referred to Dr. Wilkins for microscopical examination.

Ovariotomy—Removal of Pelvic Tumor containing Pus—Death forty-four hours after.—Dr. GARDNER exhibited the tumor, and a bottle of the pus, which was odorless. Patient was unmarried, æt. 21, from the country, and with history of good health up to December last. Eight weeks ago became ill, feverish, and had repeated rigors. In the evening would have a rigor and temperature of 103°. A tumor about size of gravid uterus, at fifth month, was noticed in the left iliac region, rounded, smooth, elastic, and not sore. She became emaciated. Her physician diagnosed a suppurated ovarian tumor. On examination, the uterus was felt anteverted and immovable. The sound entered 2½ in. Roof of vagina was encroached upon by the growth. Operated last Wednesday; it was very tedious, as there were adhesions all around to the pelvis. By tapping, 32 oz. of odorless pus came away. Over the surface of the tumor was a much dilated fallopian tube. The hemorrhage was difficult to control. Patient died after 44 hours. It was either a dermoid cyst lighted up to activity or an ordinary ovarian tumor, the sac of which had suppurated.

Interrupted Menstruation.— Dr. GARDNER said that lately he had seen, in consultation, a lady, aged about 43, who has commenced menstruating regularly after an interval of 14 years. During her early married life she had three children, after which her husband became morally insane, was morose, and lost all affection for wife and children. She was obliged to leave him. The return of the flow excited fears of malignant disease or tumor. Examination showed nothing wrong, except slight hyperplasia of the uterus.

Progress of Science.

WHAT IS MEANT BY NERVOUS PROSTRATION.

By ROBERTS BARTHOLOW, M.D., LL.D.

Professor of Materia Medica and General Therapeutics, in the Jefferson Medical College, of Philadelphia.

[Read before the Philadelphia County Medical Society]

The popular conception of the condition now known as "nervous prostration" is a state of debility in which nervous derangements predominate. A man actively engaged in business or in public life presently finds himself unequal to his daily tasks; he suffers odd sensations in his head; his digestion is disordered; he is weak; wakefulness, mental depression, and a thousand and one new sensations of strange character and fearful portent are superadded. The unfortunate subject of these ills now recoils from his work, gives himself up to the consideration of his symptoms, and relaxes his hold on the interests and occupations of his life. All the world declares he has "nervous prostration," and this explanation satisfies. Physicians say "neurasthenia" or "hypochondria," according to their habits of mind or their training. Sometimes this condition is called the "American Disease." Indeed, there is a general notion, widely prevalent, that neurasthenia is a peculiarly American malady. The late Dr. Beard was the apostle of this dispensation, and he not only was noisy and persistent in his advocacy of that view, but claimed, indeed, to have first clearly defined neurasthenia, and to have classed under this designation the numerous symptoms pertaining thereto. If we cannot admit Dr. Beard's claim in its entirety, if we experience repulsion at his tremendous but unconscious egotism, we are still compelled to acknowledge that his work in this connection is the most important that has appeared. He was peculiarly fitted to differentiate this malady, by reason of the quickness and acuteness of his intellect, his power of analysis in its subtlest aspects, and his far-reaching, his omnivorous faculty for related facts.

The term *neurasthenia*, advocated by Beard, is by no means of recent origin. The corresponding French word used in the same sense as we now employ it, has been a stock word of French neurological medicine for fifty years. Under the terms spinal irritation, hysteria, hypochondriasis, the nervous state, etc., symptoms of the same character as those now included in the word neurasthenia have been described. Besides the general state, similar derangements of functions of particular organs have been separately considered as palpitation of the heart, headache, flatulence, impotence, etc. In the word neurasthenia—popularly, nervous prostration—the whole morbid complexus is included. The question I have to consider is whether this is a real, a substantive disorder. Are the notions now generally entertained about it founded on true conception of the condition?

I need not enlarge on the importance of a correct understanding of a morbid state which is supposed to be due to the conditions of modern, especially of American, life. Without stopping now to question the soundness of the prevailing doctrine I will place before you the clinical history of two cases, representative of the two types of neurasthenia. These may be designated respectively as the *congestive* and the *anæmic* varieties. The latter are greatly more numerous, but the former are not uncommon, as Beard admits.

CASE I.—THE CONGESTIVE TYPE.

Mr.——, æt. 44, president of one of the largest railroad corporations of the West. He is now a robust man, 5 feet 10 inches in height, 196 pounds in weight, and has a very dark complexion, his type of constitution being the so-called bilio-nervo-sanguineous. Beginning his career at an early age, in a subordinate position, he has, by force of a superior intellect and of a physique that no labor could subdue, risen to the highest office, and now controls vast interests. Ambitious, enterprising, resolute, he has carried these faculties into all his work, and has shrunk from no tasks, however severe—from no responsibility, however onerous. As he has risen in position, social engagements have also added to his burdens. His mode of life has changed to some extent. His habits have become more sedentary, although diversified by frequent railroad journeys; the pleasures of the table, including wine-drinking and late suppers, have been more and more indulged in; excessive smoking has been added to these indulgences; and thus, whilst his physical powers have been slowly impaired by bad hygiene, the demands on his mental powers have increased. Extensive interests, uncertain, often precarious, business arrangements, and the incessant watchfulness required when vast combinations may be wrecked through failure at any point, demand the highest use of every faculty; and thus to work is added worry.

Three years ago Mr.——observed that he was not feeling well, and that he could not work as before. He became dull, especially after meals, had a constant headache, dizziness and throbbing of the temples; he applied his mind with difficulty, and all of the head symptoms were increased by the efforts made; he had a good, rather a keen, appetite; a heavily-coated tongue, flatulence, constipation, and some colic pains. The bladder was rather irritable, especially at night; sexual inclination had declined, with lessened power, and various ill-defined but annoying sensations were felt about the penis, scrotum and perineum. During the first year the symptoms increased; the attacks of vertigo were sometimes very severe, so that he had to support himself for a moment to save him from falling. On several occasions he became very much dazed, even lost consciousness momentarily, and once wandered some distance from the proper route he was taking. Anomalous sensations of creeping and crawling, coldness and tingling, and often a burning heat, were felt in the scalp; sudden detonation in the centre of the head apparently; buzzing and singing in the ears, and very constant headache, were also experienced. In the extremities, the tongue and the genitals there were felt peculiar tingling, numbness, coldness, creeping and similar sensations. During the whole time of the existence of his symptoms Mr. —— suffered from depression of spirits, a deep melancholy in fact, and he lived in constant apprehension of failure of mind.

Physicians whom he consulted in the West located the malady in the brain, diagnosticated cerebral hyperæmia, the prelude to softening.

When Mr. —— came to see me, sixteen months ago, the symptoms just detailed continued, and were rather increased than diminished. The objective examination furnished the following details:—

His face is full, the eyelids puffy, and the lower lid swollen into a bag; the conjunctivæ are injected, the sclerotic muddy, and the pupil sluggish in movement. On opthalmoscopic examination, the fundus is seen to be injected, small vessels prominent, veins swollen. There is no optical defect, except that due to his age. The membrana tympani is also rather deeply red, and vessels too small to be seen under ordinary circumstances are now in view. Hearing is unaffected.

Motility, sensibility—the tactile, pain and temperature senses—are unaffected; and the reflexes remain normal, although probably a little sluggish. The electrical reactions are normal.

His tongue is heavily coated, the breath foul. His appetite is good, but a sense of fullness at the epigastrium persists for several hours after meals; acidity and eructations of rather foul gas now and then occur. The stools have the normal appearance, consistence, color and odor. The urine is copious, acid, specific gravity rather high (1.025 to 1.030), and there are traces of sugar, as is usual under such circumstances.

The action of the heart is good, the pulse regular, the tension of the vessel rather high. The

respiratory movements and murmurs are normal. The area of hepatic dullness is rather enlarged and the splenic dullness seems also to be increased.

Subjectively the following symptoms are experienced: Various strange sensations in the scalp, a persistent headache, blurred vision at times, vertiginous feelings occurring irregularly and of varying severity, despondency, vague apprehensions, fear of places—especially of crowded assemblages, difficulty of deciding questions—very trivial or otherwise—in place of former promptness, impaired memory for persons, names and things.

Notwithstanding this extended list of symptoms Mr.—did not have an ill look, but, on the contrary, on superficial examination, appeared to be robust. To him and to his immediate family the situation seemed in a high degree alarming. The surrender of his position and his business interests was regarded as imminent. To the apprehension awakened by his head symptoms was added the diagnosis of cerebral congestion, and hence the profound melancholy into which he was plunged.

COMMENTARY.—My conclusion was that the disturbance in the functions of the brain and nervous system were secondary to derangement of the assimilative processes—of the primary and secondary assimilation—and that to the functional disorder thus caused are added the effects of introspection, and the realization by the centres of conscious impressions to an unusual extent, of ordinary peripheral excitations. My reasons for coming to this conclusion will appear hereafter. The remedies consisted in a careful regulation of the diet, in baths, exercise, in a reduction of the hours devoted to work, but not the cessation of work; in the use of a laxative quantity of sodium phosphate daily, and in the administration of the aqueous extract of ergot, with the chloride of gold and sodium, and a minute quantity of bichloride of mercury. If time and space would allow, the details of hygienic management—so important in these cases—could very profitably, I think, occupy our attention. But I must pass on to the next case.

CASE II.—THE ANÆMIC TYPE.

Mr. ——, æt. 56; a lawyer by profession. His type of somatic constitution is the nervous-sanguine; weight, 145; height, 5 feet 9 inches. He has immense mental energy, extraordinary quickness of perception, a capital logical and critical faculty, and fine oratorical power. These native abilities, conjoined with extensive cultivation, soon placed him amongst the foremost men at the bar of the city where he practised, and have long maintained him in that position. For many years he has been a dyspeptic, and suffered much from eructations of gas, from acidity and flatulence. At times—months, even years intervening—he has experienced very severe seizures, accompanied by extreme mental depression, alternating with as extreme mental exaltation. During the past five years he has had two attacks of gout, neither severe nor protracted. During the whole course of his professional life he has sustained no reverses, encountered no other anxieties than those of a successful lawyer, and has been rather singularly free, indeed, from the worries of life. Receiving last summer the nomination as a candidate to an important office, this cultivated gentleman, scholar and lawyer, this man of nice tastes and high tone, entered on a canvass marked by vituperation and slander to an unusual extent. About the same time some business interests became entangled, and caused no little worry. During the campaign he visited some malarious districts, and spoke several times at night in the open air. A speaker of great readiness and power, he never suffered from any considerable fatigue after public speaking, and hence he was now surprised to find himself exceedingly tired after even a brief effort. He began to have drenching night sweats, lost his appetite, grew weak, and was compelled to return home. It was then ascertained that he had malarial fever, and was treated accordingly. But at this time, and subsequently, symptoms not necessarily of malarial origin appeared. He became frightfully dyspeptic, had enormous eructations of gas, and very considerable flatulence; his arms and legs had a numb feeling, attended with "pins and needles;" he walked with some difficulty, partly because of weakness; she was somnolent and slept a good deal, and his spirits were extremely depressed, especially on awaking in the morning. During these periods of depression he was so overwhelmed with despondency that he was apprehensive he would lose his self-control entirely.

When he placed himself under my charge he had still a slight daily paroxysm of fever, the exacerbation occurring in the morning; but this disappeared in a few days, under the action of some efficient doses of quinine. He was very weak, pallid and emaciated, and slept a good deal of the time. He had no headache; his vision was rather dull, and ideas and speech slow. Every morning, on awaking, he was profoundly melancholic, and all the annoyances which the campaign had developed were gone over in his mind. He could talk of nothing else, think of nothing else, than his ill-feelings, and the disagreeable political and personal slanders of which he had been made the victim. He complained much of the numbness of his hands, of weakness in the limbs; and he talked incessantly of his depressed feelings. The bowel became irritable, and he was compelled to rise every two or three hours during the night, the urine being acid, and depositing heavily of uric acid. Presently the somnolence was displaced by insomnia, and he slept less and less, and rose in the morning haggard, exhausted, and horribly nervous and depressed. Ordinary hypnotics proved unequal to the effort to force sleep, and increasing doses of chloral became necessary. His mental activity, heretofore so remarkable, declined, and the effort to force his mind to the performance of any work, such as letter-writing, caused a sensa-

tion of fatigue. He also became undecided, even in small matters; ceased to have any inclination to go out and mingle with the public, and grew more and more averse to political movements. He reached a point, finally, when to meet strangers caused him great distress, excited the circulation, and induced a cold sweat.

As it became indispensable that he should resume the canvass, he made a strong effort, and, notwithstanding the fatigue, mental and moral depression, and exposure of public speaking, hand-shaking, and other matters of political expediency, he actually improved somewhat. The insomnia, irritable bladder and hypochondriasis, however, continued, but to a less degree. In a few weeks, by means, chiefly hygienical, I succeeded in stopping the chloral; natural sleep was resumed, although it remained somewhat fitful. Suitable dietetic regulations, baths, exercise and medicines, *pro re nata*, removed, or at least greatly modified the principal symptoms. Two weeks at Atlantic City accomplished no little good, and when he return to Philadelphia last week he appeared to be nearly his old self.

COMMENTARY:—In this case we have exhibited that complexus of symptoms entitled neurasthenia or nervous prostration in its anæmic form, produced by several factors—moral and somatic. The moral were very influential, but, unless the conditions producing bodily depression had occurred, the former cases could hardly have effected such results. Long-standing dyspepsia had prepared the way; malarial intoxication and fatigue contributed an important series of changes, and upon this weakened bodily state were precipitated crushing moral influences.

These cases, whose histories I have just read, are typical—each is the representative of a group. The causes are complex; the effects are not limited to one organ, or set of organs, but involve the system in general. To name this malady from the disturbance in one's system seems to be an error unless the definition is sufficiently elastic to include all the functions affected. Neurasthenia names one, only, of the parts involved. To entitle this the "American Disease" is a strange misnomer. It might, with more propriety, be called the "French Disease," for a condition known as the "nervous state," as "nervism," as "neurasthenia," and similar terms, has been recognized and frequently described by French writers from an early period in this century. In France have existed the causes in the most influential form. The frequent political convulsions, the exacting social life of the great cities, and the harassing struggle for existence, inseparable from the state of the great mass of the population, induce, if any mere external conditions can, that which is called nervous exhaustion. There are two factors supposed to be especially influential in this country—work, and our exciting political and social life. I believe that the effect of these is greatly overrated.

The brain, of all the organs of the body, illustrates in the most perfect manner that which has been happily styled "the principle of least action;" that is, to execute given tasks, it expends the least possible force, or, to express the same idea in another form, its work is done with ease, with the minimum of effort. Given a certain amount of repose (sleep), and supplied with proper nutriment (healthy blood) the brain will do its allotted work continuously during its working (the waking) hours. So far from being injured by severe labor, carried on under normal conditions, the brain is improved by it. Mental activity, like muscular exercise, keeps the brain in a healthy state. When, therefore, a man says he is suffering from the effects of mental overwork, I want to know what his vices are. Worry may be one of these; worry is exhausting. The worries of life do infinitely more harm than the work of life, how onerous, soever, it may be. The cases I have just read illustrate this.

I deny that life is more exciting on this side of the Atlantic. The one prize of life is money, and to get possession of it is the supreme purpose, to the attainment of which every energy is put forth. Is it less so elsewhere? Who are the people that despise money and make no effort to obtain it? Here life is less exciting, because our political condition is stable, and but comparatively little exertion is required to secure a comfortable subsistence. I am speaking now of the mass of the population, and not of the few consumed by ambition for political and social distinction or led by a pitiless greed. It is the very ease and luxury of our American life that causes mischief. It is the indulgence in eating and drinking, the abuse of alcohol and tobacco, sexual excesses, sedentary habits, and too luxurious lives generally, that induce the state of the system called nervous exhaustion. If I had time, each of these should be considered in relation to this subject. In the first case I narrated the pleasures of the table and disordered assimilative functions caused the trouble. In the second case, dyspepsia, malarial toxæmia and unusual fatigue were the pathogenic factors. In both, the effects of these causes were increased by moral influences, in one, the anxieties involved in vast business enterprises; in the other, the excitement of a hot political contest. These moral causes would have no injurious effect, had not the somatic conditions been unfavorable.

I come now to the most difficult part of my subject. I have to answer this important question: Why are the somatic derangements caused by the conditions referred to, in some cases accompanied by the mental and nervous symptoms which belong to neurasthenia? Why do some subjects with indigestion and assimilative disorders, or with the results of dyspepsia and malaria, suffer from the derangements of the mental and nervous functions, and not others? I might here take refuge behind an accepted generalization, and say that the presence or absence of the neurotic type of constitution explained the difference in the result. There is aptness in this explanation, but it is not entirely adequate. There

is a mental condition of great importance, and, unless we comprehend this, we fail to realize all the possibilities of the nervous side of these case. I, however, barely hint at the main points, under these circumstances. Besides, I wish to avoid a too metaphysical discussion of the subject.

In the conduct of life every man who has a position to make or to maintain, exerts a certain moral force to hold himself up to his work. Some men are so happily constituted that they are quite unconscious of the effort and stand in the front, serenely confident. Others are all the time laboring; they feel it and know it, and, like the soldiers of Thomas's corps at the battle of Chicamauga, sorely pressed, now and then looked back, to see whether their grim resolute commander was still behind them with his invincible courage. Men conscious of making the effort to keep up need but little excuse to surrender themselves to their sensations. At the present time nervous prostration is much feared; its symptomatology is a common subject of discussion; and hence, familiar with its character, a man who is arrested in his career by some of the ailments supposed to belong to it, his imagination readily supplies the rest. When a man begins the study of his bodily sensations, having a certain model in his mind, he has little difficulty in filling out the details. All the world knows that when the attention is strongly fixed on an organ of the body, functional disturbances of it ensue, and finally structural changes may be induced. No part of the body is without sensation, even in health. To perceive these sensations the attention needs to be withdrawn from external things and concentrated on the part. Thus it is when the subject of neurasthenia pursues the introspection, he becomes conscious of numerous sensations, which, because now felt for the first time, are new. Under these circumstances, also, the seat of conscious impressions becomes more acutely perceptive. Suggestion adds its quota of symptoms.

To the indefinite and multiplying nervous symptoms developing thus subjectively, must be added the reflex. Headache, vertigo, *tinnitus aurium*, amaurosis, diplopia, hallucinations and illusions, defects of speech, paralysis, are reflex symptoms on the part of the brain; palpitation, intermittent pulse, angina pectoris, laryngismus, stridulus, asthma, are amongst the reflexes of the respiratory organs and heart; neuralgia, anæsthesia, and other disorders of the sensory nerves, and local paralyses, affections of the motor nerves, included amongst the nerve reflexes, may all be dependent on reflex excitations proceeding from the stomach. Indeed, there is no symptom in Beard's catalogue of those belonging to neurasthenia that may not be due to merely reflex influences having their initial seat in the digestive apparatus. It follows that the term neurasthenia, or its common equivalent, nervous prostration, is either inadequate or it expresses too much, Inadequate if the complex of symptoms includes the functional disturbances of all the organs affected, expresses too much if the malady is merely a nervous one.

In reply to the question: "What is meant by nervous prostration?" I respond: a disease usually functional, situated in one or more organs. During the course of which reflex disturbances of the brain occur, and numerous subjective sensations in all parts of the body are realized by the consciousness."

I deny that neurasthenia is a primary nervous affection, or that it is a substantive disease. I hold that is symptomatic and secondary.

This conception fixed in the mind, the treatment of neurasthenia is successful or unsucessful according to the measure of our skill in localizing the initial disturbance and in addressing our remedies to that as well as to the general state. —*The Polyclinic.*

NEW TREATMENT OF ULCER OF THE STOMACH.

Simple ulcer of the stomach, the ulcer of J. Cruveilhier, which is often called the round ulcer, is one of the most rebellious affections to therapeutic measures. Why is it that this *simple* ulcer, as it is called, persists for months and years without cicatrizing? What cause presides over the formation of the ulcer, and what influences preside over its development, its chronic course? If one wishes to give to these questions a truly scientific solution he is obliged to acknowledge that there is something connected with its origin and course, which is still unknown. The theories of thrombosis, embolism, and of inflammation, if they explain the losses of substance, and the ulcerations of the mucous membrane, do not explain the form and characters of the round ulcer. So far as the action of gastric juice is concerned, if it contributes to the progress and extension of the ulcer by a sort of digestion why is this digestion limited so often, and not cause perforation and destruction of the stomach. It would seem that the acid reaction of the gastric fluids has a bad effect since so much good has been done by alkalines and Vichy water.

The treatment of these ulcers is a more simple matter than the pathogenesis. The beneficial effects of strict diet have long been recognized, especially of the milk diet. But there are serious objections to the milk treatment. A person with ulcer of the stomach should take, if put on the milk diet exclusively, three or four quarts of milk every day. This enormous quantity may be well tolerated, and the gastric pains, the vomiting, and hemorrhages may cease. But one cannot with impunity introduce into a sound stomach, much less into one in bad condition, four quarts of liquid a day, without causing dilatation of the stomach. Without doubt, this can be in a manner obviated if the patients be not allowed to take much milk at a time. But the morbid state and atony of the stomach make digestion more slow and difficult. If to this we add the

fact this dilatation of the stomach may cause hemorrhage and perforation of the ulcers, it is easily seen that the milk diet may be a source of great danger.

For a long time M. Debove has paid special attention to means for reducing the quantity of milk ingested. For this purpose he has used concentrated milk and powders of milk, representing, in small volume, considerable quantities of milk. But these have not the nutritive value which is found in meat powders. It has been objected to M. Debove's theory, that the dilatation of the stomach which he attributes to the quantity of the ingesta is due to the affection itself, to the ulcer of the stomach. But, as Bouchard has seen, who has for a long time recommended a dry diet for dilatation of the stomach, and as Debove has also seen, the dilatation disappears under the influence of this regime alone, so that it cannot be due to the ulcer.

The dry diet of M. Bouchard consists in the administration of food very finely divided, or very divisible, as powdered meat or cheese, and at the same time very nutritive. While the amount of dry food is reduced, only a minimum quantity of liquid is allowed, about a pint of water, or wine and water, in twenty-four hours. On this diet the stomach is never distended by food, and the dilatation diminishes or disappears. It is by this dry diet that M. Debove treats ulcer of the stomach; but he adds an important factor to it. Before commencing treatment he washes out the stomach, in order to clear away the mucous, and the *débris* of food which may be there. This washing is done with a rubber tube by the physician himself, as a little carelessness in its use might cause hemorrhage. Duguet has reported a fatal case of hematemesis, caused by the patient attempting to use the tube himself. Debove has never had a case of hemorrhage attributable to the use of the tube, but he very justly remarks that hemorrhages are quite frequent in ulcer of the stomach, and that when the tube brings up "coffee-grounds" blood it cannot be said that the hemorrhage was caused by the washing. If, however, during the washing the liquid brought up has a rosy tint, the operation should be at once suspended.

M. Debove believes that if gastric digestion and the action of the gastric juice can be suspended for some time, the cure of the ulcer will be greatly favored. By rendering the gastric juice alkaline its digestive properties are taken away, and the transformations of albuminoid substances into peptones is stopped. In this manner the matters undigested by the stomach pass into the intestines with an alkaline reaction very favorable to intestinal digestion. Debove has obtained effects which lead him to believe that he can make a patient take ʒ vij of bicarbonate of soda, in three doses, in twenty-four hours. He has shown, by his washings of the stomach, that under the influence of this treatment, the stomach liquids were never acid, and contained no peptones. The patients were given ʒ vjss of meat powder, and ʒ ijss of bicarbonate of soda three times a day. This mixture not being very agreeable to the taste is introduced into the stomach through the tube. To this diet, which represents ʒ lxx of meat and ʒ vijss of bicarbonate of soda a day, is added a quart of milk, taken in small quantities during the day.

The *alkaline cachexia* which Trousseau and other physicians have spoken of was seen in none of Debove's patients. This treatment has given most excellent results, results which have never been attained by any other method of treatment.—*Le Progrès Méd.*

ILLUSTRATIONS OF LOCAL HYSTERIA; WITH REMARKS ON DIAGNOSIS AND TREATMENT.

A paper read at the Annual Meeting of the Lehigh Valley Medical Association.

By CHARLES K. MILLS, M.D.,

Honorary Member of the Association; Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and College for Graduates in Medicine.

I.

Hysteria, from its prevalence, and the difficulties of its diagnosis and treatment will always be to the physician a subject of paramount practical importance. He who aspires to be a neurologist must, among his early achievements, master this great subject. He must learn, in the language of Skey,* that it is a "great malady and not a trivial derangement of the hour."

I will not stop to discuss at length the nature of hysteria. I will simply reiterate what I have said elsewhere,† that it is a disease with an undoubted cerebral pathology. The most striking phenomena of hypnotism can be produced in many of the hysterical; and, according to Heidenhain,‡ the cause of these phenomena lies in the inhibition of the ganglion cells of the cerebral cortex. "Complete abeyance of the supreme functions of the nervous system," says Wilks, § "is one of the most characteristic features of hysteria."

Sir James Paget* says of hysterical patients, that they are as those who are color blind. They say "I cannot;" it looks like "I will not;" but it is "I cannot will." It is my purpose in this paper to bring before you some illustrations of this abeyance of the will, of this inhibition of cerebral ganglionic cells, as exhibited in local hysterical affections, and also to discuss briefly their

*Hysteria, etc. Six lectures delivered to the students of St. Bartholomew's Hospital, 1866. By F. C. Skey, F.R.S., London, 1867.

† Epileptoid Varieties of Hystero-Epilepsy. By Charles K. Mills, M.D. *Journal of Nervous and Mental Disease*, October, 1882.

‡ Animal Magnetism. By Prof. Rudolf Heidenhain. Translated from the German by L. C. Wooldridge, B. Sc., London; C. Kegan Paul & Co., 1880.

§ Lectures on Diseases of the Nervous System. By Samuel Wilks, M. D., F.R.S., Philadelphia: P. Blakiston, Son & Co., 1883.

diagnosis and treatment. These disorders have attracted a large share of attention since Brodie, in his *Lectures Illustrative of Certain Local Nervous Affections*, in 1837 pointed out their comparative frequency, although before his time they were neither unknown nor undescribed.

Various localized phenomena may, of course, be present in any victim of hysteria; but I wish here simply to call attention to those cases which have as a landmark some single local manifestation.

Many illustrations of local hysteria are to be found in one of the works of Laycock, † who discusses neuralgia of the breasts, and of other parts, sweatings and hemorrhages, vomiting, tympanites, dysphagia, hysteric hydrophobia, coughs, deafness, palpitations and pulsations, fits of sneezing, spasm of the glottis, alterations of the voice, hiccough, distortions of expression, pain in the left side, and morbid sensibility of the senses—truly a formidable list; but I believe, with Skey, that every part of the human body supplied with nerves, be they cerebral, spinal, or ganglionic, may become, under provocation, the seat of local symptoms so closely resembling those of the real disease to which that part of the body is liable, as to appear identical with it, and the resemblance to which is so perfect as to deceive the best of us. This author enumerates, as the more common seats of these affections, the female breast, the side of the trunk under the ribs, the whole spinal region from the atlas to the sacrum, any joint, but especially the knee, the stomach, the bladder, and the ovaries, the muscular system of the extremities, and the muscles of the larynx.

Paget advises that the name hysteria should be discarded, at least, from surgery, and proposes for the cases of unwilling imitation of organic disease, the English term "nervous mimicry," or, in untranslated Greek, neuromimesis.

Dr. S. Weir Mitchell* devotes several chapters of his *Lectures on Diseases of the Nervous System, Especially in Women*, to mimetic or local hysterical affections.

Some of the manifestations sometimes classed as local hysterical affections are simply downright frauds practiced by hysterical patients. The nature of others is doubtful. The erratic secretion of urine, for example, has frequently engaged the attention of writers on nervous diseases, and has awakened much controversy. Laycock's position seems to be that the symptom may be real, but usually is simulated.

American hysterics are certainly fastidious about this matter, as I have not yet met, in a considerable experience, with a single example of paruria erratica. It does not require much discernment to see that most of the reported cases are absurd impostures. Charcot† refers, sarcastically, to an American physician who in 1828 gravely reported the case of a woman passing half a gallon of urinous fluid through the ear, in twenty-four hours, at the same time "spirting out" a similar fluid by the navel. He also alludes to the case of Josephine Roulier, who, about 1810, attained great notoriety in France, but was discovered by Boyer to be a fraud. This patient vomited matter containing urea; and shortly after came a flow of urine from the navel, the ears, the eyes, the nipples, and finally, an evacuation of fæcal matters from the mouth.

Hemorrhages from eyes, ears, nostrils, gums, stomach, bowels, etc., have often been observed among the hysterical; these cases sometimes being fraudulent, but sometimes genuine. In the Philadelphia Hospital is now a patient suffering from grave hysteria, vomiting of blood being a prominent symptom. I will detail the case from notes carefully prepared by the resident physician, Dr. Randall.

A. G., æt 19, a dressmaker, was admitted to the Hospital, July 23d. Her body was well formed and nourished. Her eyes were bright and had a peculiar nervous expression. She denied any venereal taint. On the night of her admission she began to spit or rather cough up blood of a bright hue, intermingled with froth, the coughing being accompanied by a peculiar gurgling sound in the throat. Her head was thrown violently from side to side, with convulsive tremors of the extremities, and seeming unconsciousness. On being threatened with a hot iron she became rational. On the following day her menstruation came on, she having previously menstruated on the 12th. Her lungs were carefully examined, but nothing could be discovered; neither could any abrasions of gums or throat be detected.

The hemorrhages were repeated on the 26th and 28th, and were apparently under control of the will, occurring more frequently during the attendance of the resident or attending physician.

On the evening of the 28th she became unconscious, passing into a cataleptoid state. Ice-cold water was applied to her head, and a galvanic current to her back, with the effect of restoring her to consciousness in a few minutes. The hemorrhages of a few ounces of blood have occurred nearly every day until the present time, and have not been visibly affected by hæmostatics which have been used. She has no signs of inflammation, ulceration, or other disease of the stomach.

She is very sensitive over the left ovary, but complains of pain in no other region. Very little food is retained, and yet she does not emaciate. On the night of August 10th she bled profusely from the nose, and at the same time blood was coughed up. In a few minutes she passed into a trance,

* Clinical Lectures on the Nervous Mimicry of Organic Disease. By Sir James Paget, Bart., F.R.S. Lancet, for October, November and December, 1873.

† A Treatise on the Nervous Diseases of Women. By Thomas Laycock, M.D. London, 1840.

* *Lectures on Diseases of the Nervous System, Especially in Women.* By S. Weir Mitchell, M.D. Philadelphia: Henry C. Lea's Son & Co., 1881.

† Lectures on Diseases of the Nervous System, delivered at La Sapêtrière. Translated by Geo. Sigerson, M.D. Philadelphia, H. C. Lea, 1879.

the flow of blood ceasing. All measures failed to arouse her; but pressure over the ovaries produced general convulsions. She remained apparently unconscious for twelve hours, occasionally raising blood. When she awoke she declared that she remembered nothing that had occurred.

Hysterical affections of the larynx are of comparatively frequent occurrence. Thaon* describes four principal forms,—aphonia, spasm, anæsthesia —of each of which I have seen illustrations. Cohen† also describes and discusses most of the hysterical laryngeal disorders in his well-known work.

The following case is of interest, not only because of the aphonia, but because, also, of the loss of the power of whispering. The patient, a young lady of hysterical tendencies, while walking with a friend, stumbled over a loose brick and fell. She got upon her feet, but a moment or two later either fainted or had a cataleptoid attack, from the description given. Several hours later she lost her voice and the power of whispering. She said that she tried to talk but could not form the words.

This condition had persisted, when she first consulted me, for ten months, in spite of treatment by various physicians. She carried with her a pencil and tablet, by means of which she communicated with her friends. She had also suffered with pain in the head, spinal hyperæsthesia and occasional attacks of spasm. Laryngoscopic examination showed bilateral paresis of the vocal muscles, without atrophy. The tongue and lips could be moved normally. She was assured that she could be cured. Faradic applications, with a laryngeal rheophore, were made daily; tonics were administered, and the patient was instructed to begin at once to try to pronounce the letters of the alphabet. In less than a week she became able to whisper letters, and a few days later, words. In three weeks voice and speech were restored.

Just as this patient was recovering, another came to me to be treated for loss of voice. She was markedly aphonic, but could whisper without difficulty. In order to encourage her, I told her that she need not be worried about her loss of voice, as I had another patient who had lost not only her voice but also the ability to whisper, and yet had recovered. To my dismay, the patient returned the next day unable to whisper a single syllable. She made, however, a speedy recovery, under a treatment similar to that instituted for the first patient.

Under the name *apisthyria*, or inability to whisper, several cases of this kind have been reported by Cohen.*

A considerable number of cases of hysterical laryngeal spasm or cough have fallen under my observation. One case, of over two months' duration, was cured by two applications of a weak galvanic current, the cathode being placed on the nape of the neck and the anode above the sternum and along the sterno-cleidomastoid muscle. Whether the result was due to a moral or a physical impression, I am unable to say.

Coughs, variously described as ringing, rasping, grating, barking, etc., are well-known hysterical symptoms.

In lyssophobia, or hysterical hydrophobia, a barking cough is a common symptom. During the past spring a case of this kind was admitted to the Philadelphia Hospital. The patient, a young man, several months before had been bitten by a dog, and had caused a sensation in the community by having attacks which were supposed to be hydrophobia. After admission, at short intervals during the day, he had violent seizures, in which his body was contorted and tossed about, and in which he barked and snapped and sputtered, presumably like a dog. He was taken into the clinic room and lectured upon a certain cure being prognosticated. Orders were also given to burn him on the nape of the neck, with a white-hot iron, on the slightest appearance of spasm or cough. He recovered promptly. When a barking cough is present in a case of supposed hydrophobia, the diagnosis of hysteria may be confidently made.

Hysterical dysphagia is sometimes a dangerous, and always an annoying affection. A young woman was sent to Skey's wards at St. Bartholomew's Hospital, to be treated for difficult deglutition. She had been treated for stricture of the œsophagus. Probangs and bougies had been used, but failed to pass a given spot corresponding with the base of the neck. She had no local pain.

As the obstruction increased, nothing but semi-liquid food passed into her stomach, and this only with difficulty and pain. She became weak and emaciated. In beginning her treatment Skey declined the use of a probang or bougie, and confidently asserted that he would remove the obstruction without the aid of instruments of any kind. He ordered bark, iron, valerian, wine, milk, with brandy —each to be given in the largest quantities at the shortest intervals consistent with reason and moderation; three times in twenty-four hours, enemata of thick soup with an ounce of brandy. In three weeks she was convalescent. She was in high spirits at her recovery, her only vexation arising from the physician's refusal to pass a probang down her throat before she left the hospital. This he peremptorily declined to do, assuring her that a probang of rump steak was a far more efficient test of recovery than any instrument in surgery bearing that name.

A few years since I treated a case of this kind: The patient was an unmarried lady, 40 years old, with a neurotic family history, a maternal uncle and aunt having been insane. At intervals since puberty she had had various hysterical manifestations. After a severe winter, during which she had suffered more or less with rheumatism, she became depressed with reference to her spirit-

* *Edinburgh Medical Journal*, October, 1881.

† Diseases of the Throat and Nasal Passages. By J. Solis Cohen, M.D., New York: Wm. Wood & Co., 1880.

* *Medical and Surgical Reporter*, May 1, 1875.

ual condition—she had, in fact, a form of mild religious melancholia. After this had lasted several weeks, she began to experience difficulty in swallowing. She would rise from the table suddenly, alarmed and gasping, and exclaiming that she could not swallow and was choking. She got so bad that she would not take anything but liquid food, and not nearly enough of this. She believed that her throat was gradually closing, and, of course, suspected cancer. In this case I took a plan the opposite of that followed by Skey, as far as the use of an instrument was concerned. I assured her that if any local obstruction existed I could remove it with one application of a probang.

I also very confidently excluded cancer, placed her upon iron, valerian and quinine, and in a few days returned and passed an instrument down her throat. I refused, however, to repeat this operation, telling her that I was absolutely convinced that she would have no more difficulty. Tonics and full feeding were continued, and in less than a week the difficulty in swallowing had disappeared.

As most cases of real stricture of the œsophagus are cancerous, traumatic, syphilitic or congenital, and as history, cachexia, and the use of instrument of precision, will, in general, readily determine these facts, the diagnosis of hysterical dysphagia is usually not difficult.

A resort to nasal feeding, as practiced in hospitals for the insane, will, sometimes, from its unpleasantness, lead a hysterical case to regain swallowing power, and, at the same time, may be the means of giving her much needed nourishment.

In one group of local hysterias, the presence of pain is the predominating feature. Copland* enumerates the situation in which hysterical pains are most frequently felt, as follows: "*a*, The head, often attended with the clavus hystericus; *b*, below the left mamma, or at the margin of the ribs; *c*, in the region of the stomach and spleen; *d*, in the course of the descending colon, and in the left iliac region; *e*, above the pubis; *f*, in various other parts of the abdomen or in the abdomen generally; *g*, in the region of the kidneys, sometimes extending in the course of the ureters; *h*, in one or more of the dorsal or lumbar vertebræ; *i*, in the sacrum; *k*, in the hip or knee joint. Although these are the most frequent situations, pain may be felt so seriously in others as to alarm the patient, as in the pharynx and larynx, in one or both mammæ, or in the region of the liver." Of these locations, omitting the consideration of headache, the most common seats of hysterical pain, in my experience, are the spine, the breasts and inframammary region, the left iliac, or ovarian region, the sacrum or coccyx and the joints.

Before turning to a few illustrations of special forms of hysterical pain, let me stop for a moment to discuss the nature of hysterical pain in general.

Dr. Charles Fayette Taylor, in a brochure on *Sensation and Pain*,* has given us a condensed philosophical explanation of such pain, drawing largely from Carpenter, Bain, Spencer, Bastian, Maudsley, Tuke, Huxley and others. The pith of the matter is, that many of our sensations are centrally initiated, the memory of previous objective sensations: "Pain is different from ordinary sensations, in that it requires an abnormal condition for its production, and that it cannot be produced without such an abnormal condition. Hence it is impossible to remember pain, because the apparatus does not exist for causing such a sensation as pain after the fact, or when it is to be remembered. Memory is a repetition, in the nerve-centre, of energy which was first caused by the sensory impulse from without. But centrally initiated sensations may be mistaken, in consciousness, for pains, depending wholly on a certain intensity of excitability in the cerebral mass."

The "hysterical spine" is one of the commonest forms of hysterical trouble; in fact, a large percentage of all cases of hysteria complain more or less of spinal irritation. Spinal periostitis, spinal caries and perhaps some cases of spinal meningitis, are organic diseases which may give rise to tenderness on pressure along the spine; but in the vast majority of cases of "spinal irritation," you have to deal with neurasthenic or hysterical patients. So much has already been written about spinal irritation, by Skey, Anstie, Reynolds, Hammond, and a host of others, that I would not take up your time with a reference to the subject were it not that, even yet, almost every week I find practitioners inclined to regard cases as organic spinal trouble, *because* of the presence of great spinal tenderness; whereas, for my part, I regard this symptom as almost diagnostic of the absence of real spinal disease. Faradization of the spine with metallic rheophores, taking sparks from the spine, or the alternate hot and cold douche, with iron, zinc and quinine internally, have proved the most effectual remedies in my hands.

HOW TO SHRINK HYPERTROPHIED TONSILS BY CAUSTIC APPLICATIONS.

Prof. Chisholm, of the University of Maryland, begins a paper on the above subject by saying: I unhesitatingly prefer excision of the enlarged gland in every case in which the patient will permit the use of the knife. It is by far the quickest, surest, and best means of securing permanent and complete relief.

In my personal experience of tonsil-cutting (and I have taken off a great many), I have never seen any trouble from hemorrhage. In fact, I have never seen any bleeding which gave me any anxiety whatever. Cases have been reported in which

* A Dictionary of Practical Medicine. By James Copland, M.D., F.R.S. Edited, with additions, by Charles Lee, A.M., M.D. In three volumes. New York: Harper & Brothers, 1859.

* Sensation and Pain. By Charles Fayette Taylor, M.D. A Lecture delivered before the New York Academy of Sciences, March 21, 1881. New York: G. P. Putnam's Sons, 1881.

very alarming hemorrhage has taken place, but this must ever be a rare accident at the hands of a skillful and cautious operator, who restricts the application of the tonsillitome to simple hypertrophies of the tonsil, and is careful how he cuts the more complex or malignant changes in the gland.

But suppose that a patient positively refuses to permit any cutting instrument to be used, what are we then to do? Such cases occur very frequently in the experience of every physician. Timid parents will not accept for their suffering children the quick, certain, and permanent relief which excision offers. At the same time they will request that treatment be instituted to relieve their children from the exposure to suffocative attacks and constant annoyances in breathing, eating, and speaking, to which these little sufferers are forced to submit. Large lumps in the throat, at all times a discomfort, swelling up under irritation till they touch at the uvula and threaten to cut off communication with the chest and abdomen, must be a serious disturbing influence in sustaining health.

Undeveloped bodies with pallid faces must be the result of this diseased state of the throat, nor is this condition of short duration. Chronic hypertrophy of the tonsil may show itself at a very early age of childhood, and usually continues up to and even after puberty. Without judicious treatment this diseased condition of the throat will continue at least during the growing period of the individual, and may possibly entail upon such patients defective hearing in addition to other annoyances. Nature, unaided, will do but little to bring about the desired relief of causing absorption of these hypertrophied glands. A general medical treatment may do much to sustain a comparatively healthy state.

Proper hygiene, fresh air, warm clothing, protection from exposure, nutritious food, with general attention to the digestive apparatus, when aided by the internal administration of cod liver oil and iron, will do much toward improving the throat.

When such treatment is instituted early enough, it will fortunately often prove successful.

I have seen no benefit from the administration of so-called absorbents, or remedies which, when taken into the circulation, are supposed to act more immediately upon the glandular system, viz., iodide of potash, iodide of ammonium, muriate of ammonia, guaiacum, etc. These, on the contrary, when given for a length of time, often disturb the digestion, and are so extremely uncertain in their shrinking action as to be of very questionable utility in removing tonsillar hypertrophies.

Nearly as much can be said of the negative results of astringents locally applied to the surface of hypertrophied tonsils to cause absorption. Such as painting the inner surface of the throat with iodine preparations, tincture of iron, glycerole of tannin, solutions of nitrate of silver, or the frequent gargling with solutions of alum, tannin, borax, muriate of ammonia, chlorate of potash, etc.

However valuable such local applications may have proved themselves in many throat affections, they are little more than placebos when used for shrinking hypertrophies of the tonsil. We have all seen cases in which some of these remedies have been assiduously applied for months with no material benefit in the permanent reduction of the throat lumps. These continue to annoy as if no local treatment had been instituted.

The local application of destructive agents alone promises no satisfactory reduction. These are usually applied to the surface of the tonsil. They are often violent in their action, difficult to limit to the tonsil proper, and, by excoriating the mucous surface to which they come in contact usually make a very painful sore throat for the patient.

These destructive applications require frequent repetition, at intervals of one or two weeks, until the enlarged gland is eaten away, as it were, by piece-meal. It is not surprising that patients suffering with hypertrophied tonsils, especially the young children, who are in such a large majority, shrink from this painful ordeal.

When the knife is not used, we must look to these caustics to effect the removal of enlarged tonsils; but there seems to me a much better method of applying these than to the exposed surface of the throat, where the good they accomplish is accompanied by so much positive discomfort. If we will utilize our knowledge of the anatomy of the tonsil, much light can be thrown upon this important subject, and a comparatively painless solution of these stubborn throat lumps can be obtained.

In the distribution of sensitive nerves, the exposed surfaces receive the larger supply according to rule, and the interior surfaces of the follicles are to a certain extent deficient in common sensation.

Here, then, we have in these deep pits of the tonsils a much more extended, less sensitive, and more easily influenced surface, to which destructive agents can be readily applied without annoying the throat proper. Caustics, if buried in the substance of the tonsil, will soon give evidence of the much desired shrinkage.

Among the various caustics for local use in causing shrinkage of tonsillar hypertrophies, I have found the chloride of zinc the most available and the least annoying to the patient. I employ it in the following manner: A wire, the size of a fine knitting needle, is roughened for a half inch from one end, so that it may hold a fibre of absorbent cotton twisted upon it. Dip this into a saturated solution of chloride of zinc, and thrust it to the very botton of the crypt, and keep it there several seconds.

When withdrawn the whitened orifice marks the cauterization. By renewing the cotton for each follicle, several may be thoroughly cauterized at the same sitting, without causing any annoying irritation to the throat. A very few applications will cause the gland to shrink, as will be seen one week after the destructive cauterization has been made to the interior of the follicles. *Virginia Medical Monthly.*

A NEW METHOD OF REDUCING DISLOCATION OF THE HIP.

In the *Transactions* of the Vt. Med. Soc., Dr. S. J. Allen writes:

"One day in the month of March, 1841, at which time I was a student of medicine in the office of John L. Swett, M. D., of Newport, N. H., I was riding in my sleigh about three miles south of the village, and passing a house situated some six rods from the road, I heard an outcry. Looking in the direction of the alarm, I saw a woman, Mrs. Perry by name, who, in stepping from the door had slipped and fallen upon the ice-covered ground. Hitching my horse, I walked rapidly towards her. As I came near, two men came out out of the house, and, raising her erect, assisted her inside.

"Grasping the leg with my right hand and the thigh with my left, I flexed the leg upon the thigh at right-angles with the body. The old lady, for thus I considered her, although but forty, complained that I hurt her badly, and somehow the limb became fixed in the position, and could not be moved. It seemed locked, and could not be moved without considerable force and pain. I immediately stepped upon the bed, and standing with her limbs between my own limbs, and placing the dorsum of her foot against my nates, with my right hand under the bend of her knee, I lifted her hips from the bed, holding her steadily in that position less than half a minute, when the head of the bone slipped into the socket, accompanied by that peculiar audiable shock which so delights the surgeon's ear. She immediately exclaimed, 'I am well, I am well.' Of course it was unnecessary to send for Dr. Swett then, as the patient was 'all right again.' Then from my directions the horse was returned to the stable.

"July 16, 1872, I was called in consultation with Dr. Sperry, of West Hartford, Vt., in the case of a French Canadian, Lewis Baumhoe, by name, a section hand on the Central Vermont railroad, who, while helping to carry a track rail, fell and struck on his right knee, the rail slipping from his shoulder, and falling on the sacrum, dislocating the right femur upon the dorsum ilii. When I arrived at West Hartford, Dr. Sperry asked me if I had my pulleys. I answered, that I had *the* pulleys that *the* Almighty furnished me with. Said the doctor, 'You can't set the legs *without pulleys*.' I answered that I could try. After the patient was chloroformed, the whole muscular system being relaxed, I stepped upon the bed, and flexed the leg upon the thigh, with the thigh at right-angles with the body, and, placing his foot between my legs, with its dorsum against my nates, and my right arm beneath the flexed knee, I lifted his hips well from the bed, and held them immovable in that position less than one-half minute, when the head of the thigh bone returned into the socket with the usual audiable sound. The reduction was accomplished so quietly that the doctor, who was standing at the patient's head, with his inhaler in hand, did not notice when it occurred, nor did he comprehend the method used, and at first questioned the fact of its having been reduced.

"By this method, the lower part of the body is lifted well from the table or bed, and held immovable. The weight of the hips and opposite leg rotates the body outwards, producing just sufficient abduction and distension to quietly draw the head of the femur through the slit in the capsular ligament, and direct it into the acetabulum. By this method no further violence is done to the soft parts about the joint; the head of the femur being drawn directly back through the rent in the capsular ligament without increasing its laceration in the least, which no other method *can* claim.

"One word in regard to other forms of dislocation of the hip. The dislocation into the ischiatic notch is a mere continuation of the dorsal form; the head of this bone being thrown simply further from the socket, it is evident that this method will quite as readily reduce this form of luxation.

"The foregoing cases, it will be observed, are all cases of dislocation of the dorsum ilii, but at the same time we should remember that luxation on the dorsum is the type of dislocations of the femur, and that before reduction is accomplished in the other and rarer forms, the head of the thigh bone must be thrown on the dorsum before it can be returned to the acetabulum. Indeed, it is not uncommon for the head of the femur to be changed from one position to the other several times during the manipulations before it can be reduced by the method of Dr. Nathan Smith. In my method the *automatic* principle is evident. The patient, being placed and held in a certain position, sets his own dislocation, thereby making him 'particeps criminis' in case of suit for mal-practice."

TREATMENT OF HIVES.

The following is said to have been successfully used to arrest hives and stop their itching:

℞	Fl. ext hyoscyamus,	ʒ iss,
	Fl. ext. juglandin,	ʒ ij,
	Oil sassafras,	ʒ j,
	Syrup,	℥ ij. M.

Sig.—One-half to one teaspoonful with impunity; repeat every ten to fifteen minutes if necessary, till relieved.

To make the cure radical I prescribe nitra-muriatic acid (use the C. P. articles only), ℥ ss, simple syrup, ℥ viiss. One teaspoonful in one-half glass of water after meals.

I have not failed to cure in a single instance with this treatment.

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COLLEGE OF PHYSICIANS AND SURGEONS.

PROVINCE OF QUEBEC.

The semi-annual meeting of the Provincial College of Physicians and Surgeons was held at Laval University, September 24, beginning at 10.20 a.m. and closing at 4.10 p.m. Dr. C. S. Lemieux, of Quebec, the president of the College, occupied the chair. Among others present were the two vice-presidents, Dr. W. H. Hingston and the Hon. J. J. Ross, Premier of Quebec, and Lieutenant-Governor Robitaille. A resolution, expressive of regret at the death of Dr. Landry, of Quebec, an old and distinguished member of the College, was unanimously adopted. The treasurer's report, showing receipts $5,322, and a balance on hand of $1,579, after paying all expenses, was also adopted, after a special committee had been named to enquire into the financial statement in detail and to report suggestions for the improvement of the actual situation. Dr. Howard submitted the report of the committee appointed to enquire into the charges laid by Dr. Lachapelle against the Victoria College, which concluded as follows: "Whereas Dr. Lachapelle, examined to-day as a witness, refuses to supply the committee with the necessary information to assist it in its investigation; whereas all the professors of the school who might be considered as implicated by the *Star* of the 10th April last have formally denied that they furnished the questions to the pupils, either directly or indirectly, it is declared that Dr. Lachapelle has refused the committee the necessary information to aid its enquiry, and that there is consequently no occasion to proceed further with Dr. Lachapelle's charges." Drs. Lanctot and Durocher having proposed the adoption of this report, Dr. Lachapelle offered some explanations. Drs. Marsden and Lamarche moved in amendment to defer the consideration of the report to next meeting. This amendment was carried by twenty-two against eleven. The following gentlemen, bearers of University diplomas, were then sworn in and duly licensed by the College: *Laval University, Quebec*—Patrick Coote, Quebec; Marie Rosaire George Matte, Quebec; Elzéar Pelletier, Rivière du Loup *(en bas)*; Eugène Larue, Quebec; Etienne Gosselin, Quebec; Joseph Arthur Millette, Agnes, Lake Megantic; Alfred Morin, St. Paul de Chester; Frédéric Stanislas Caron, Quebec. *Laval University, Montreal*—Ernest Duval, St. Jean Port Joli; Chas. Narcisse Valin, St. Hilaire, Rouville; M. T. Brennan, *Victoria University*—Odilon Berthiaume, St. Simon de Bagot; Fred. H. Daigneault, St. Joachim de Shefford; Wilbrod Fournier, St. François Rivière du Sud; Hector Leduc, Ste. Monique, Nicolet; Jean Oscar Albert Beaupré, Malone, N.Y.; Hormisdas Gauthier, St. Eustache; Roderic Mignault Acton Vale; Alfred Richard, St. Paschal, Kamouraska; Hector Brosseau, L'Acadie, comté de St. Jean. University McGill—J. O. Stewart, Andrew Stewart, C. T. Cameron, *Licentiates of the Royal College of Physicains and Surgeons, Edinburgh, (double qualification)*—James Alex. Hutchison and Benjamin Franklin W. Hurdman.

SANITARY SCIENCE.

On Sept. 27th a lecture was delivered in the Corn Exchange of this city by Dr. Stevenson MacAdam, F.R.S.E., Edinburgh, on the subject of Sanitary Science. Why the lecture was given in the place named we do not know, but the fact that only a small number were present indicates that it was somewhat of an impromptu affair. It is said that a prophet is not without honor except in his own country, and, judging by the brief remarks of after-speakers, this appears to be the case here. Our local sanitarians have again and again pointed out the requisites laid down by the lecturer, but being home productions these have fallen unheeded on the mind of our prominent citizens. The lecture is a valuable one, and we trust may bear some fruit, but there is nothing new about the subject, as the same advice could have been given by members of the medical profession here. Any one having a knowledge of the diffusion of gases is aware that they can find their way through water, and that in the case of sewer-gas the amount which thus passes through

depends on the pressure inside and outside of our sewers, and that to trap our street drains is only to increase the liability of such transmission through closet traps. When the question of trapping street gratings was discussed before the Board of Health some years ago it was then pointed out to be dangerous, and that the effect would be an increase in such infectious diseases as typhoid fever and diphtheria. As for the probability of street gratings being covered over in winter, this occurs only on the lower levels. On the higher levels many of these openings remain permanent throughout the winter, notably the one on the corner of Sherbrooke and Bleury, the steam and hot vapers arising from the drain being sufficient to keep open a shaft or chimney through the snow bank, no matter what its depth may be Our drainage system is anything but perfect, and certainly requires better ventilation, and this could be obtained without the aid of special air-shafts if all our buildings were arranged according to the system carried out in the building occupied by the Medical Faculty of Bishop's College. The plan recommended by the lecturer has been in operation in this building since its erection, over twelve years ago, and its success in preventing foul gases from entering through the closet is marked by the entire absence of the smells usually found in such places. The shaft runs upwards to the roof, and has a diameter of eight inches, and though its effect may not be appreciated, yet there can be no doubt that even the ventilation thus given to the large sewer in Ontario street must be beneficial to the houses in its neighborhood. That this system has not been adopted generally, we can only blame our architects who have the arrangements of the drainage in their hands, and if their attention is now drawn to the matter some good may result. As for our Board of Health we do not expect any intelligent reform ; its members, with few exceptions, are either ignorant of the experience of others or ignore such experience altogether, each being a sort of natural crook like medical quacks, independent of the works of those who have gone over these matters. To trap street drains would be suicidal, and should never for a moment be considered. As for the ventilation of the drains a civic by-law governing the construction of shafts in houses, together with the co-operation of our architects, should be sufficient to obtain the desired end.

Regarding disinfectants, the lecturer believed that carbolic acid and its compounds were best. We have always thought that chlorine and its compounds, as chloride of lime, were in this respect altogether better, and recent experiments have shown the view to be correct. Even in local antiseptic applications corrosive sublimate as a chlorine compound is found to be more powerful than carbolised lotions. As colonists we are generally considered by our imperial friends to be generally deficient, and many of our citizens seem to have accepted this view of themselves, as native talent or advice is not thought much of. It may be a matter of surprise to some of our influential citizens to know that all that was said at this lecture has been said over and over again for years by the professors of hygiene in the medical schools of this city and elsewhere in the Dominion.

FIFTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF ILLINOIS.

By the courtesy of the Secretary this report has been sent us. It is quite a bulky volume of over 600 pages, and contains a mass of useful information, greatly excelling all other reports of a like nature. As a State production Illinois sets an example of enterprise and liberality which should be emulated by every State or Province in America. The compilers have ignored the boundary line between Canada and the United States, and have included both without distinction. The information found within its pages cannot be obtained elsewhere in one work; and the amount of labor expended in compiling it shows not only energy but the most praiseworthy patience in collecting correct reports from so many sources. Over 6,000 letters were sent and more than 10,000, etc., received.

To enumerate all the contents would be impossible, but the following will be sufficient to indicate the purpose of the work. In the reports of the Board it is stated that over $9,000 was expended for the accomplishment of its work; and, contrasting this with the small amount devoted to this purpose in the Dominion, the inference is that we have not yet sufficient liberality and public spirit in our Government to care much for the welfare or the health of our people. A complete college directory is given, which includes all the existing colleges, and also information regarding those now extinct. Prefacing the colleges of each State will

be found a compendium of the laws regulating the practice of medicine therein, together with comments by correspondents of the Boards, various other data, statistics, etc., thereby increasing the usefulness of this contribution to the history of Medical Education in this country. Taking the Province of Quebec, we read the following information: Population 1,358,469; number of physicians 1051; number of inhabitants to each physician 1,292. Then follows the Act relating to the Profession of Medicine and Surgery. Each University is given, their course of instruction, requirements, fees, number of students and remarks. This can be taken as an example for what is found under the heading of each State and Province. In the summary is given the following information: In the United States there are 136 Medical Colleges; in Canada 15. This includes regular, Homœopathic, Eclectic, some which are very irregular,—none of the latter exist in Canada. In the States only 82 colleges exact an educational requirement as a condition of matriculation, and only 18 three or more courses of lectures before graduation. There are 8 colleges for women, only 6 in the U. S. and 2 in Canada. Of students of the session 1882-3 there were 12,363 in the U.S. and in Canada 856; Graduates in the U. S. 4,244, in Canada 164. The per centage of graduates to matriculates was, in the U. S., 33.9, in Canada 19.1. In the geographical distribution of physicians: In Canada there is one to every 1,112 persons—this is the smallest proportion, excepting New Mexico, which has one in 1494. The largest is Maryland, one to every 329. In Colorado, South and North Carolina and Utah, 1 to 341. The total number of students is 11,791, or an average of one in every 4,265 of the population—the newer States having the fewest number, Arizona having only 1 to every 15,000 population. Wyoming one in 20,789; Idaho one, 16,305, etc. On the other hand, the District of Columbia had one in every 1724, the older States all showing greater numbers of students. In Canada there is one student for every 4,000 of population.

The Jefferson Medical College, Philadelphia, is credited with 560 students; Rush Medical College, 545; College P. and S., New York, 536; University N.Y., 528; The Quincey Coll. of Medicine has the lowest number, 5 students; University Kansas 7.

The latter half of the volume is occupied by sanitary matters connected with the State of Illinois. The small-pox epidemic of 1880-82 and its result being thoroughly investigated. This work is a very mine of information on certain matters pertaining to medicine, especially educational, so that it repays one to read it, and as a reference it is invaluable in many respects. Much may be gathered from it of the future tendency of medical education and the progress that medical science is making. It is certainly a welcome addition to our library. The Secretary of the Board will no doubt furnish copies on application to any persons requiring them.

The following gentlemen passed the supplementary examination in the Faculty of Medicine of McGill College for the degree of M.D., C.M., held on the 16th, 17th and 18th September.

D. A. Cameron, Strathroy, Ont.; J. T. Mackenzie, Belleville, Ont.; J. A. McArthur, London, Ont., and I. C. Sharpe, New Brunswick. They will return to Montreal next Spring to receive their degree at convocation.

DENTAL BOARD OF EXAMINERS.

The regular annual meeting of the Board of Examiners began on Wednesday morning, September 17, in this city, the full Board being present, as follows: President W. Geo. Beers; Vice-President, C. F. F. Trestler; Treasurer, C. Brewster; Secretary, L. J. B. Leblanc; Registrar, C. H. Wells (Huntington); H. D. Ross (Quebec); L. W. Dowlin (Sherbrooke.)

Since the last meeting an important amendment was obtained to the Act of Incorporation, which effectually strikes at unlicensed practitioners: No person, unless holding the license of the Board, can now practise either directly or indirectly, or attempt to evade the law by causing his services as dentist to be indirectly paid by means of the sale of drugs; and physicians or surgeons who desire to practise and be publicly known as dentists must pass an examination on operative and mechanical dentistry. The same privileges and exemptions conferred upon physicians and surgeons are conferred upon dentists. The standard of study has been much improved. No person can now enter upon the study of dentistry without previously undergoing the matriculation examination prescribed by the College of Physicians and Surgeons, the same as is required to enter the study of medicine, though graduates in arts or students having matriculated in arts are exempt. Students are articled with licentiates for four years,

and are obliged to attend one full course of lectures upon anatomy (theoretical and practical), physiology, and chemistry. The examinations are of a very practical character. Not only have the students the usual written and oral examination, but a preliminary practical in operative and mechanical dentistry, extending over a month before the meeting of the Board, and are obliged to bring patients before the Board. The examinations are divided into eight parts : Anatomy and physiology, chemistry and metallurgy, anæsthetics, hygiene, operative and mechanical dentistry, dental pathology, materia medica and therapeutics, irregularities of the teeth, origin and development of the teeth. After the present year applicants for license must present a thesis which they will have to defend before the Board.

The Legislature did not empower the Board to teach, but, in lieu of regular courses of lectures which would have to be given in both languages to a very limited number of students—some years only one forthcoming—a synopsis of studies embracing the subjects of examination will be given the students, and, as has always been done, every possible gratuitous assistance is afforded by the Board to guide them in their work. Some marked improvements in this direction are being made. Owing to the numerical weakness of the profession in this Province, the use of two languages, and the absence until recently of text books in the French language, students, especially French, have been handicapped. The greatest possible liberality has always prevailed in the examinations, the students being given the written questions and allowed to answer them in their own language.

Resolutions were passed to the effect that candidates who fail to present themselves for the preliminary examination, which is optional, shall be obliged to pass the operative and mechanical branches before and by the whole Board, and that each member of the Board shall have a vote on the both subjects.

It was also resolved that no licentiate be allowed to open branch offices in which students have charge, as it is directly in contravention of the Act. The report of the Special Committee on the Act of Incorporation was received and confirmed. A vote of condolence was passed to the widow and parents of the late Edmond Pointier, of Quebec. The new by-laws were read and received, and authority given to have them printed in English and French, and distributed to the licentiates.

Several applications for examination were rejected on account of irregularity. The examinations occupied the entire two days and evenings from nine a.m. until ten p.m., and were very thorough. Some of the operations in gold, as well as the mechanical work, were highly commended by the whole Board. It was remarked by those who had been members for some years that the papers show a much higher degree of study than ever before presented. The compulsory attendance upon lectures has had a remarkable effect, while the demonstrations and preliminary examinations have also been productive of good practical results.

The following are the branches upon which the students were examined: Dental anatomy and physiology, chemistry and metallurgy, anæsthetics, hygiene, operative and mechanical dentistry, dental pathology, materia medica, therapeutics, irregularities of the teeth. The examiners on the operative and mechanical branches each presented a report of the operations, &c., performed in their presence by each student during the preliminary.

The result was the following gentlemen received their parchments and the title of licentiate of dental surgery: Messrs. John Gentles, G. J. B. Gendreau, A. A. Lantier, F. X. Tremblay, Montreal; Mr. J. S. McKee, Quebec; and Mr. Alf. McDiarmid, Richmond. One candidate was rejected.

It was remarked that the students who had attended the lectures on anatomy, physiology and chemistry in our Canadian Medical Colleges were very much better posted in these subjects than those who attended American Dental Colleges.

The new by-laws contain the following among other provisions :—

Before entering upon the study of dentistry in the Province of Quebec every person must, previous to signing indentures with a licentiate, present to the secretary of the board a certificate of having satisfactorily passed the matriculation examination prescribed by law (Act 46 Vict., chap. 34. sec. 7), whereupon the secretary shall register such student, and from that date his period of studentship will count.

Graduates in arts, or students having matriculated in arts in any university in her Majesty's dominions are not required to pass this examination, but may register their names with the secretary upon giving satisfactory proof of their qualifications and paying a fee of $10.

The period of studentship will comprise four years of actual service in the office of a licentiate, and the attendance after the second year upon at least one full course of lectures in a recognized dental or medical college upon the following subjects: Anatomy (theoretical and practical), physiology, chemistry. In practical anatomy the student must give proof of having dissected at least one head and neck.

If a student desires to attend a dental college, the actual time of such attendance will be accepted as equivalent to the same period of studentship.

Students in their third or fourth years may obtain from the secretary a brief synopsis of studies, comprising an outline of the special subjects of examination.

Any student of dentistry desiring to obtain a certificate of license to practise dentistry in the Province of Quebec is required:

1st. To be of the full age of twenty-one years.

2nd. To have complied with the requirements of the foregoing by-laws as to matriculation and studentship.

3rd. To transmit to the secretary at least one month before the date fixed for the examination, a notice of his desire to be examined for such certificate, accompanied by the treasurer's receipt for the fee of sixty dollars required by section 2 of by-law 3, and a declaration by himself, and a declaration of his preceptor according to the forms approved by the said board or to the like effect.

4th. To pass an examination before the board on the subjects embraced in section 5 of this by-law; to perform operations in the mouth, and to give practical evidence of his skill as a mechanical dentist before such examiners as may be appointed.

5th. The examinations will be written, oral and clinical, and will be divided as follows:—

1. Dental anatomy and physiology (head and neck).
2. Chemistry and metallurgy.
3. Anæsthetics, dental hygiene.
4. Operative dentistry [theoretical and practical].
5. Mechanical dentistry [theoretical and practical].
6. Dental pathology, therapeutics and materia medica.
7. Irregularities of the teeth [causes and treatment].
8. Origin and development of the teeth.

If an applicant should fail to pass the examination, forty [$40] dollars will be refunded to him.

A preliminary practical examination in operative and mechanical dentistry will be conducted by the examiners in these branches. To facilitate matters, applicants have the option of passing this, one month before the final examination, upon application to the examiners; thus giving an opportunity to make good later any deficiency that may occur. The practical examination must be passed in every case.

On and after the meeting of the board in 1885 every applicant for license must present to the secretary, a month before, an original thesis upon some practical subject in dentistry, which he must defend before the board.

The examination will be held on the third Wednesday of September in each year, unless otherwise arranged, when timely notice will be given every licentiate.

Local and General.

Nothing satisfactory has yet been determined about the cholera germ. The French Commission sent to investigate the disease in Egyyt and Koch's researches in Calcutta and Southern France have led to nothing very definite as yet, except to prove that, with ordinary care, men may spend their time cutting up cholera cadavers with impunity.

The patriotic French Commission were almost certain to be jealous of a man who, besides being a German, had the coolness to inform them not only that their Egyptian cholera germs are not peculiar to choleraics (*Blut plattchen*), but that their vaunted discovery is no discovery at all, an English observer having found them twelve years ago in the blood of people dead of cholera.

Who has seen a case of hydrophobia? I never did. More than that I never had the pleasure of conversing with any medical man who ever saw one. I have encountered the disease in the dog, but I consider an inhabitant of Montreal as likely to be a sufferer from yellow fever as from true rabies.

P. A. LAVER, M.D.

MONTREAL, July, 1884.